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Notes on Early Painting and Craftsmen-Painters.

IN speaking of the craft or trade of painting, we have been long accustomed to associate its practice with house-finishing, and, therefore, we call it a building trade. If we go back, however, a few centuries, we find this craft existing under a different set of conditions than what obtained at a later period, when the revival of art in Western Europe and Great Britain brought a distinct class of practitioners to the front, and when the artist found a special field for his talent without being obliged to combine fine art with handicraft. The brotherhood or guild of painters existed from a very early period to the time of Elizabeth, before it was incorporated. We have in the civic records a very interesting acknowledgment made by a painter in the 12th Edward I. (1284). This entry, which is in Latin, says:—"On Friday, the Eve of St. Botolph, in the twelfth year of the reign of King Edward, Nicholas Bacon, painter, acknowledged that he was bound to Hugh Motun, in the sum of twenty shillings, for cinople, vermilion, and canvas, varnish and verdigris, the same to be paid to the same Hugh or his certain attorney, ten shillings at the Feast of St. Bartholomew, and ten shillings at the Feast of St. Michael, without delay." This very distinct mention of the materials used for varnish painting upon canvas is worthy of particular note, inasmuch as it is more than a century earlier than the time of John Van Eyck, who is reputed to have been its inventor. In our "Notes" some months ago* on "Early Plastering and Plasterers," we alluded to the practice of fresco-painting in the Middle Ages, in connexion with the walls of our ecclesiastical buildings and the state chambers of our chief castles, and no doubt native painters of skill participated in the work as well as foreign artists. In the reign of Elizabeth the painters began to make sore complaint about the decay of their craft by reason of other persons that had not been apprenticed to the calling undertaking painting work, and the house-plasterers among others were accused of intermeddling "in the same science." We are told much slight work was palmed off as pictures of the queen, noblemen, and others. And as John Strype, in his edition of Stow, tells the story,—"People bought the same, being much deceived, for that such pictures and works were not substantially wrought, a slander to the whole company of painters, and a great decay of all workmanship in the said science, and also a great discouragement to divers forward young men desirous to travel for knowledge in the same." Complaints were also made from time to time to the Lord Mayor, but without redress: so in 1575-6 the craft of painters addressed Elizabeth, and shortly succeeded in obtaining a charter of incorporation, and became known in future as the Painter-Stainers. The craft or guild, among other exclusive privileges, obtained power to prevent persons following the trade who had not been apprenticed to that mystery for seven years. They had also authority to enter shops, warehouses, or workhouses of men exercising the craft, and to "search, examine, and survey their works, painting, colours, or other stuff."

In Elizabeth's time we see, as at a much later period, the painters or painter-stainers of London were not merely house-painters, but essayed a little artistic work in picture and sign painting. Queen Elizabeth's Sergeant-painter was one George Gower, and it was his office and that of his deputies to superintend all the painting work required in the service of her Majesty. To enumerate, this included "all colour, oil, varnish, workmen, and labourers, as well free as foreign, and all manner of necessaries and stuff whatsoever, meet for to be employed for that service. And also to take up all manner of carriages, as barges, boats, carts, wagons, horses, with their furniture, necessary for the conveyance of the premises, as well by water as land at reasonable payments and prices to be made on that behalf." The Sergeant-painter to the Queen had certainly a kind of public department to control, and if he was obliged to express an opinion as to the excellence of certain pictures and statues, like our modern First Commissioner of Public Works, we may suppose that his decision would not give unmixed satisfaction to the artists and artist-craftsmen of his day. In the 1st Edward III. (1327), in the civic records, there is a long agreement drawn up in Latin and Norman French, having relation to the grievances of the painters as well as their brother-crafts, the joiners, and the lorriners in copper and iron, who were assaulted and defrauded by the craft of the saddlers. There was an appearance before the mayor and sheriffs on the part of the offenders and the offended, and certain rules as to the future were agreed to. The saddlers appear to have ridden the high horse for a long time, beating and otherwise maltreating the painters and men of other trades, and repudiating their lawful debts. The painters were owed upwards of 100*l.*, and the other trades lesser sums. Alleged infringement of the privileges of one trade by another has been an immemorial cause of trade disputes, and notwithstanding that the exclusive privileges of trade guilds have been abolished, trade jealousies still exist to a remarkable extent. The infringement of a trade mark in these days is in the eye of the law an illegal act, and, apart from the litigation ensuing from a flagrant case of fraud, we constantly see what an amount of bad blood is generated even on the suspicion of a colourable imitation. *Apropos* to the early allusion to oil painting above, as also to the crafts of painters and saddlers, there is a passage in the Liber Horn, *temp.* Edward II. (preserved in the Guildhall), of interest,—"Rules as to painting old and new saddles. It is provided that no one put any but good and pure colour upon gold and silver; that is to say, good cynople, good green, good vermilion, or other colour tempered with oil and not brasil or indigo of Baldas or any other bad colour." The sinople was most likely the green colour mentioned in old French heraldry, the brasil was a coarse red, and the indigo should be from Bagdad instead of "Baldas."

To skilled and artistic members of the old guilds of painters may be safely attributed sundry paintings and pictures that formerly embellished the walls, wainscots, and ceilings of their old trade-halls in several cities and towns in the three kingdoms as well as in London. The painting of sign-boards and the pictorial representations of men, animals, birds, and mystic personages over the doors of inns and hostelries was, for the most part, the work of members of the painter's craft, though there have been a few artists in modern days, who afterwards became distinguished members of their profession, who did not disdain in their early career painting a pictorial sign for an inn. Large prices have been demanded and paid for some of these signs in our own day, when their author became known. Before the passing of the Irish Municipal Reform Act, which abolished the old trade guilds of Dublin, the craft of the painters or painter-stainers did not exist as a distinct guild among the twenty-five minor corporations of that city, but the trade, nevertheless, was, in its representation, associated with another; indeed, two, three, or more crafts were often represented by a guild which bore no relation in name or affinity of pursuit with those associated with it. In Glasgow, for instance, the craft or ancient guild of Wrights, *i.e.* Carpenters, had associated with them the painters and plasterers. The wrights in Glasgow were originally mated with the masons and coopers; but the latter seeking separation, were disjoined in 1567. Later on the wrights sought disjunction, and obtained from the magistrates and town council a separate letter of deaconry or seal of cause, dated the 3rd of May, 1600. It appears ther, by this incorporation were included wrights, glazing-wrights, boat-wrights, painters, bowyers, and sawyers. From the minutes of the Glasgow Town Council of October 1st, 1659, we take the following curious entry as to "One painter in Glasgow," his skill, and the work the City Fathers required him to do:—"The said day, in answer to the supplicationne given in be Robert Marschell, pyntor, showing that hes skill in washing and pynting of houss, and given proof thereof in sundrie places within this brughe, and seeing there is but on [one] the lyk within the samyn brughe, and not one vthir in all the Wast of Scotland, desyring therfoir license to practise and occupy the samyn peacablie heirafter within the said brughe (that occupation being rather ane science nor ane craft), quhilk being weighed and considered be the said provost, baillies, and counsell, they, after consideratioun had thereanent, doe heirby grant licence and libertie to the said Rot. Marschell to wash and pynt houss to any within this burghe or territorie thairof who pleases to employ him for that effect without any impediment to be made be him thairintill." House-painters must have been in a very backward state in Glasgow in the middle of the seventeenth century. Two years earlier than the above entry, one John Colquhoune appears to have been in request by the Glasgow Town Council for making engines for carting water, mending the town clock, painting, and doing other town work. On the 8th of August, 1657, we find the following minute:—"The same day it is concludit and agreid upone be the saide Magistrates and Counsell that James Colquhoune paint and fix the tounes armes and zeir of God on everie horologe brode, and that been done, grantis warrand to James Bornis to pay the said John Colquhoune for the paynting and collouring of the four horologe brodis of the tolboothe, and gilting the letters thairof as they now stand, the seume of four hundrethe merkis money, out of the money collectit for the buckats, and quhat the said James does farder to the globis, he is to be satisfied thairfore, be sicht of John Walkinschaw." The regular profession of the architect appears to have been as much under the shade in Glasgow at the end of the seventeenth century as that of the craft of painting. In October, 1678, one Alexander Thom, "architector," was granted liberty and licence to reside within the burgh, "and to exercise his employment and calling in architectorie and measonrie." In 1684 we find the said Alexander Thom sending in his account and getting paid in the sum of 405*l*. Scots, in addition to other moneys previously received for work done. His work included, among other details, "cutting the king's armes upon stone, furnishing ane stone thairto,—peynting and gilding thereof, and cutting the king's armes on timber for the king's seat in the High Kirk, contryving the modelles of the frontispiece of the lofts thereof, and for cutting severall thistles and crowns for the use of the said seat, and his haill panes and attendance thairon, and the taking down and putting up the said lofts, and for eight cedar tables and the pertinents belonging thairto, furnished be him for the use of the town, &c."

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* See *Builder*, May 31, 1884, p. 774.

Somewhat cognate to our subject is the early craft or art of glass-painting, or staining, in connexion with our Mediæval churches, and later on in the houses of the wealthy, where the work of the glass-painter was executed in movable casements and became articles of furniture. The origin and growth of glass-painting would, however, need a paper to itself; but, apart from foreign indebtedness, England in the fifteenth and sixteenth centuries, without going back further, has good reason to feel proud of the work of her craftsmen-artists, although these men were content to be known under the appellation of "glaziers." The names of several of these highly-skilled native craftsmen have reached us, with their agreements or contracts with their patrons. Dallaway and others who have written on the subject are inclined to the opinion that, from the contracts made between the benefactors of ecclesiastical buildings in the middle centuries after the Conquest, the glaziers furnished the stained glass cut into various shapes and inclosed in lead as the colours were required. It is believed also that the pattern or design from which the windows were composed was first given by the same artists who painted the walls in fresco. John Thornton, of Coventry, executed the great east window at York in the reign of Henry IV., and the art must have been more or less successfully practised by native craftsmen before that time. James Nicholson, a glass-stainer, was in much request in the sixteenth century; and it is recorded of Mark Willens, who died in 1561, that he supplied the glass-stainers and arras-makers of his time with designs for their several works. The city company or guild of glaziers were a long time in existence before they became a chartered body. It was not until the 13th of Charles I. that they appear by the name of "Master Wardens and Commonalty of the Art or Mystery of Glaziers and Painters on Glass of the City of London." At the Reformation glass-painting in connexion with our churches passed under a dark and bursting storm-cloud of Vandalism, but there was a revival in the seventeenth century.

Before concluding our notes, a passing allusion will not be out of place to the ancient craft of writers of text letter commonly called "Limners." This class included the illuminators, painters, and decorators of manuscripts. There is an ordinance of the writers of text-letter and others who bind and sell books dating from the 4th Henry IV. (1403). The representatives of these crafts petitioned the Mayor and Aldermen "to grant unto them that they may elect yearly two respectable men, the one a lymenour the other a text-writer to be wardens of the said trades," &c., so that the crafts might be better governed and conducted in future, and that good work should result. The Limners for the time being were granted what they solicited. Ireland, at least, may feel justly proud of her early illuminated manuscripts, particularly the almost miraculous skill in ornamentation evidenced in the Book of Kells. From the fifth to the end of the eighth century illumination, or the art of ornamenting manuscripts, was practised with great perfection in Ireland in connexion with the Church. Those who wish to know more of the subject will find, in the "Palæographia Sacra Pictoria" of Mr. J. O. Westwood, the English palæographer; in "Illuminations and Fac-Similes from Irish Manuscripts in the Libraries of Switzerland," by the Rev. Dr. Ferdinand Keller, of Zurich; and in the "Handbook to the Byzantine Court" and "Art of Illumination," by Digby Wyatt, food for reflection and just tributes. The influences of this early school of illumination, in the opinion of the last-named writer, extended much further than is generally supposed, Scotland, Wales, Cornwall, the North of England, and Scandinavia adopting its peculiar system of ornament. The matchless illuminators of old have long died out, but in the architecture of the long past their influence may be traced. The history of civilisation is the history of education and science and art combined. Stone-carving in process of time in the British Islands gave birth to sculpture proper and painting as fine arts and painting, as a skilled craft, and other building handicrafts, performed good pioneer service.

NOTES.*

MR. SELLARS'S Bill to amend the system of Private Bill legislation in the United Kngdom is a practical attempt to effect a needed reform. When so much national and public business requires the attention of members of Parliament, it is wholly unreasonable to expect them to sit as judges on the numerous private Bills which require to be investigated. In one word, the object of this Bill is the creation of a court of not more than three judges, which shall be either formed of the whole number, or of a single judge, and fulfil the functions of the present private Bill Committees. After taking evidence and investigating the scheme and the views of those who oppose it, the Court is to report to Parliament. It is to have the power of sitting when Parliament is not in session, and of reporting the results of its investigations during the prorogation of Parliament, when it reassembles. There is also provision made for the court to sit in other places than London. Of course, there are further details, but such are the main features of this scheme.

THE advantage of the above scheme would be that it would leave Parliament free to fulfil its larger functions, and that it would allow more time and consideration to private Bills, which would not, as now, be pushed into the few months of a session. In many instances, by taking local inquiries by one member of the Court, such as in tramway and gas Bills, a great deal of expense might be saved, and a more satisfactory result attained than is now the case. Nor would the absurdity of an appeal from a Committee of the Commons to a Committee of the Lords, or the reverse, any longer continue. The scheme, in some interested quarters, and among very Conservative members of Parliament, who are fond of traditional privileges, may meet with opposition, but its main principles can scarcely fail to be approved by the Legislature and the country at large.

THE announcement that the London and North-Western Railway Company are reducing the time in their great workshops at Wolverton by one day in the week, and one hour in each of the remaining five days, is perhaps the most serious indication of bad times that has recently been given. From 1854, when the Board of Trade Railway Returns commence, to the end of 1883, the income of the English railways has shown a steady and continuous increase, the sole exceptions having been in the years 1878 and 1879, in the former of which there was a decline of 600,000*l* in gross revenues, followed by a further decline of equal amount in the latter. With this exception, advance has been constant. From 1854 to 1877 it amounted to a little over 3½ per cent. per annum, year after year, and it has maintained the same rate on the average from 1877 to 1883. The repairs of engines and vehicles form an accurate gauge of the activity of a line, as they rise or fall in close proportion to the locomotive cost. The indication, therefore, now given that the wear, and thus the use, of vehicles, is falling off by one-sixth on this great line, is of the most serious nature; more especially coming as it does on the heels of the decline already brought to account for the latter half of 1884. When this mark of waning traffic is compared with the decline of fifty-five ships, and 59,000*l*. in receipts, on the Suez Canal, in January, 1885, from January, 1884, it will be seen that the subject is one demanding very serious attention.

THE difficulties that attend the sanitary government of suburban London do not decrease as time goes on, nor are they likely to do so, so long as the great city continues to squeeze out its inhabitants *extra muros*, while, on the other hand, the country districts continue to furnish perpetual relays of persons whom taste or circumstances induce to become town residents. Nowhere is this more clearly illustrated than in the once rural and exclusive Richmond, which, for various reasons, has fallen upon troublous times, that do not tend to make the position of the powers that be a bed of roses. First and foremost, the celebrated deep well in the chalk, about which so much has been written and said within the last year or two, has been summarily extinguished, and the engineer and contractor desired to carry away their plant. But little has been said about it since the final abandonment of the undertaking three weeks or so ago, which is not to be wondered at, as such an ill-considered and costly fiasco is not creditable to those concerned. The well was commenced originally in 1873, and, despite the experience and ill-success of similar ventures at Kentish Town and Tottenham Court-road, was proceeded with until the great depth of over 1,400 ft. was reached, while from first to last at least 75,000*l.* has been thrown away, with scarce a single favourable item that can be placed to the credit side. The Vestry has another, though comparatively small, difficulty on hand in the shape of the new dust-destructor, which was erected a few months ago with many laudations all round. It undoubtedly does its work as far as consuming rubbish goes, but so vigorously that the whole neighbourhood complains of it as a nuisance, and the result is that an injunction has been applied for in Chancery. When to the water and the dust troubles is added the formidable expenditure that is looming over the town for the general drainage scheme, it must be admitted that both the authorities and the ratepayers are likely to have anything but a pleasant time before them.

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* In order to report more fully the valuable lectures at the Royal Academy, we omit our usual signed article this week.

AMONGST other proposals for solving the vexed question of the sewerage of the Lower Thames Valley, a scheme has been submitted to the Local Government Board, based on the Shone hydro-pneumatic system, for collecting and delivering the sewage to Bisley Moor, where it is believed sufficient land can be acquired for purification purposes by utilisation. As some doubts exist as to the possibility of acquiring the land, the alternative is suggested to adopt the tank system for purification by atmospheric oxygenation, on the method patented by Messrs. Shone, Donaldson, & Ault, which consists of clarification in the first instance by settlement, and upward filtration through coke or gravel, and then by discharge through perforated plates, which form the sewage into a fine spray, each perforated plate being separated from the succeeding one by a horizonal conduit, in which the sewage flows from one cascade to the other of sufficient length to allow of the combination of the oxygen absorbed at each cascading with the impurities in the effluent sewage. The estimated cost of collecting and delivering the sewage to Bisley amounts to 338,054*l.*, and of the tanks and cascades sufficient to deal with a volume of 7,500,000 gallons a day, about 15,000*l.*, besides 9,000*l.* for the land; or, in all, 362,054*l.* The annual charges are estimated at 20,882*l.*, inclusive of interest on capital and redemption fund. If this is intended to be distributed amongst a population of 200,000 persons, it will amount to a rate of 2s. per head of population, in addition to the sum required to meet the charge for the collection and conveyance of the sewage within each district itself. The Shone system has proved an effective one where it has been tried, and the present proposal may be the best solution for a joint scheme, which, under any circumstances, seemingly, cannot but be very costly.

PROFESSOR HENRY ROBINSON gave an address at the Parkes Museum on Thursday evening, on the subject of "River Pollution," in the course of which he observed that the Rivers Pollution Prevention Act of 1876, the result of the various Royal Commissions on the subject, was now seen to be of too optional a character, and to have a fatal defect in leaving it to local authorities (who were often the offenders) to put in force the Act. Various abortive Bills had since that time been brought before Parliament, and there now existed such a general agreement upon main points as to enable further legislation to be shaped. The recent returns obtained by the Duke of Northumberland showed that since the passing of the Rivers Pollution Prevention Act of 1876, only fifty-three cases had arisen under it, and only twenty-four cases had resulted in orders being obtained to desist from pollution. This indicated that the Act was practically a dead letter. The remedy would probably be found in the formation of Conservancy Boards to have control over wide areas, and to have charge of watersheds.

FROM Mr. MacMahon, the Sanitary Inspector for the District of Torquay, we receive a report of "seven years' sanitary progress" in that district (1878 to 1884), printed by order of the Board. In the course of it, the use of terebene oil is mentioned as a successful means of detecting the existence and position of flaws in drainage. We may quote one case as described:—

> "In August, 1879, there was some illness and complaint of bad smells at a house on Victoria Parade. At that time, carbolic acid was the test generally used. I tested the drains of the house carefully, and made an examination of the arrangements, but neither succeeded in discovering any cause for the smells, which the occupier was convinced were drain smells. He pointed out a spot in the party-wall between his and the next shop as being where he sometimes found the bad odours. I obtained the adjoining occupier's consent to test his drains, which, however, he maintained was unnecessary, as he was sure they were right, having been recently laid. The result of the test was uncertain, as the smell found in the affected house resembled gas. A late member of this Board (Dr. Campbell) suggested 'terebene' as a testing oil; this was applied, with the result that near the door of the second shop the odour was perceptible, it was unmistakable in the other, and in a cupboard in a direct line with the other places named it was also found. The drain was opened under where the smell was first found, and about 2 in. of the collar of a pipe was broken off, from which, through earth and party-wall, sewer gas found its baleful way to the house. The unfortunate occupier had suffered illness in his family, and some deaths also occurred, which were to some extent due to the cause thus brought to light. There has been no complaint from that house since. The second case gave even more satisfactory results as an experiment."

THE case of Ballard *v.* Tomlinson, decided on Tuesday, February 17th, by the Court of Appeal, by which the decision of Mr. Justice Pearson was reversed, places the law in regard to the pollution of underground water on a satisfactory footing. The Judge decided that as a person has no right of property in underground water percolating through his soil,—that is to say, that a previous landowner may drain it away if he pleases,—he has no right to any particular quality of water if it reaches his land. The corollary of this proposition naturally is that any person through whose property the underground water percolates may do what he pleases in regard to it, may foul it, and make it as impure as he pleases. It is obvious that such a decision must be injurious in its consequences. A may not have any reason to take away the water which flows under his land, and therefore it reaches the land of B, who pumps it up. But had Mr. Justice Pearson's decision remained the law, then, as happened in the particular case, A might pollute the underground water before B could get it, so that it may not only be useless, but may actually do injury to any one who uses it. The Court of Appeal have now set the matter, if we may say so, right. They have held that a person, though he may not have a right to underground water, yet if it reaches him, is entitled to have it in a pure condition; that A may not pollute the percolating stream by putting noxious matter into a place where it will contaminate the water which reaches the land of B. It is clear that the decision may have far-reaching consequences: for it may preclude dealing with the surface of lands in a way to prevent water flowing underground therefrom being fouled. It cannot be confined to the pollution of the underground water, as in Ballard *v.* Tomlinson, where an old well was turned into a cesspool so as to pollute the water which the plaintiff drew from his well. But wholesome water is one of the first necessaries of life, and a decision which helps to keep it pure is of the highest importance. There are certainly many country villages where pollution, knowingly or unknowingly, is permitted. This recent, clear, and common-sense decision of the Court of Appeal will place the law on this point in such a state that the pollution of underground water can, we hope, now be stopped without litigation.

ANOTHER case, that of Dawson *v.* Clementson, which was tried before Baron Huddleston on Tuesday last, was of some interest in relation to the rights of tenants to throw up their engagements in consequence of sanitary defects in a house. In a general way, the law is a great deal too favourable to landlords in regard to such questions. In this case the defendant (the landlord) was shown to have gone to some expense in relaying the drains before letting the house to the plaintiff. The latter noticed a disagreeable smell under the kitchen window, and the defendant, on attention being drawn to it, satisfied the plaintiff that it was owing to a bell trap at that spot not having been kept charged with water. The plaintiff, however, left the house abruptly before the termination of the engagement, and repudiated the contract. The defendant's case was that no accusation of breach of contract in regard to the condition of the house was valid until the plaintiff had served defendant with a notice to repair, which he had never done. The jury came to the conclusion that the house was "reasonably fit for habitation" when the plaintiff abandoned it. Judgment for defendant, with costs. We hold that in the abstract no contract should compel a tenant to remain in an unhealthy house; but it seems clear that the plaintiff put himself technically in the wrong, through omitting the proper legal action, and perhaps exaggerated the evils complained of. Part of the moral of the case is,—do not trust to traps that require artificial nursing to be kept in an efficient condition.

THE Water-Colour Exhibition at the Dudley Gallery contains some powerful drawings, and some of the best work is signed by names with which we are not very familiar. Among architectural subjects, the "Exterior of the Church of the Holy Sepulchre" (179), by Mr. N. E. Green, may be mentioned, and Mr. Harry Goodwin's "Verona," seen just as it is described in "Sordello," a dark outline against a long flare of sunset light. Mr. Herbert Marshall's "Sunrise in London, Midwinter" (79), is a very fine view of the side of Westminster Hall and the Victoria Tower behind; but the points of the compass seem to have been a little freely treated to get the light behind the Victoria Tower. Mr. Medlycott's "Westminster, from Lambeth" (66), is a mere travesty of the Houses of Parliament, and shows the painter to have little eye for architecture. Mr. Edwin Ellis's "The Shadow of the Head" (178), a rough sea under the shadow of a great rocky promontory, is the best thing of his that we have seen. Mr. C. Robertson's "Whitby" and "Newcastle" (273, 348) are worth attention, the former especially; and, in a very different style, Mr. G. Marks's "Sunshine and Shadow" (380) is a bold attempt to deal frankly with the bright tone of green verdure in strong light. Mr. Bernard Evans treats "The old Road to Maentwrog" (535) in a style slightly reminiscent of David Cox. Miss Helen Thornycroft has one or two admirable flower pieces, and Mr. H. R. Steer has caught the spirit of Dickens in his small but highly-elaborated representation of a scene from "David Copperfield" (491), in the middle of the screen.

THE sale is announced at Christie's, on the 5th of March, of the works of the late Mr. Harry Johnson, the well-known water-colour artist, and formerly a member of the Institute of Painters in Water-Colours. The drawings will be on view on the two previous days, and will comprise, among other things, many interesting sketches of monuments of Classic architecture in Greece and Asia Minor.

MESSRS. DOWDESWELL exhibit, at their rooms in Bond-street, a collection of marine sketches in water colours by Mr. W. Ayerst Ingram, comprising studies of sea water under very various conditions of light and movement, not all equally successful. "Tide Ripple" (28) is one of the best, and "A Drifting Match," where a number of yachts are nearly becalmed, with every inch of canvas set, is very real. But our impression is that the artist is aiming at variety rather than thoroughness of work.

THE *Courier de l'Art* mentions that Madame de Châtillon, a talented lady artist, and Professor of Painting in the École Municipale of Paris, is about to organise a gratuitous course of instruction in drawing for ladies and young girls who wish to perfect themselves in the art. Madame de Châtillon entertains the hope of thus founding a school of design applicable to industries such as are most generally carried on, or may be carried on, by feminine hands, such as the shaping and ornamentation of dresses, the design of curtains and hangings, of lace, the decoration of books, painting on panels and on glass, &c. The Department of Public Instruction, we are told, has recognised the value of Madame de Châtillon's endeavours, and is prepared to subsidise the school.

THE Duke of Marlborough's reply to the offer made by Mr. Gladstone to purchase certain of the pictures in the Blenheim Collection, as given in a recently-issued Parliamentary paper, reminds one irresistibly of Mr. Wegg's rejoinder to Mr. Boffin's overtures to that remarkably endowed literary man, "'I never 'aggle, Mr. Boffin,' said Wegg; 'so, done for double the money.'" Mr. Gladstone informed the Duke that he would be prepared to advise the Treasury to give 100,000*l.* for the "Madonna degli Ansidei," by Raffaelle, the full-length equestrian portrait of Charles I., by Vandyck, and the "Garden of the Hesperides," by Rubens, to which the Duke replied that he would be willing to take 200,000*l.* His Grace, however, ultimately agreed to accept 70,000*l.* for the Raffaelle and 17,500*l.* for the Vandyck; but as it will be necessary for the Treasury to obtain a vote for these amounts, the bargain cannot be regarded as concluded. The memorial sent in by the Royal Academy in favour of the purchase of the pictures is a curious specimen of composition, in which Raffaelle's "Madonna" is said to illustrate "that happy period in which the reverent purity and serene grace of the master's earliest work is already mellowing," and more in a similar strain. Let us obtain the pictures by all means if possible, but why "gush" about them?

THE next examination of candidates for the Associateship of the Institute of Architects will commence on the 23rd of March, and the last day for receiving applications is Saturday, the 7th of March. During the present week a provincial examination for Associateship is being held at Manchester under the direction of the Manchester Society of Architects, the oral examination being conducted by the Chairman of the London Board of Examiners, Mr. Cates. The examination renders the admission to membership of the Institute a real guarantee of adequate professional knowledge and training; it is one of the best moves the Institute has ever set on foot, both for its own interests and those of the profession at large, provided the latter accept the situation *en masse*, as they will probably be more and more inclined to do as they recognise the value to themselves of co-operating with a central body which makes examination by competent men a test of admission into its ranks.

New Riverside Fish-market.—The Duke and Duchess of Westminster visited the East-end on Wednesday in order to perform the ceremony of driving the first pile at the works which have been already begun for the erection of a fish-market at Shadwell. The site is on the shores of a deep bay of the river, about one mile and a half below London Bridge, one advantage gained by the choice of this situation being that the vessels bringing up fish to the market will avoid the delays to navigation in the Pool. The market proper, that is for the disposal of fish wholesale, will have a frontage of 224 ft. to the river and an area of nearly 22,000 ft. The semi-wholesale and retail market to be erected hereafter will have an area of over 14,000 ft. Mr. C. Dunch is the architect of the market and works. The market is being erected by a joint-stock company.

ON SOME PRINCIPLES AND CHARACTERISTICS OF ANCIENT ARCHITECTURE, AND THEIR APPLICATION TO THE MODERN PRACTICE OF THE ART.*

I AM to speak to you to-night of some principles and characteristics of architectural design which may, I think, be usefully brought before you for your consideration. My remarks will be but suggestive, and will embody ideas which you may work out for yourselves, at greater length, in your researches into the nature and the history of ancient architecture. They will be, for the most part, principles and characteristics common to all styles, rather than those peculiar to any.

It is no insignificant subject that I would bring before you. Think of the long story of the great works of architecture in the past. What a history it is. Not to look further back, let us think of that marvellous time when Greece, as it were, brought order out of the chaos of barbaric work, and, suddenly, became the land of all that was beautiful in art,—art with its sculpture portraying nature and expressing the life of nature, not only in its highest phase, the portraiture of ideal perfection of the human form, but also in the delicate beauty of carved ornament and artistic detail. Then on to the work of the Romans, massive and sturdy, lacking, indeed, the grace and tenderness of the best Greek work, but eminently impressive and manly, and superior to that of the Greeks, in construction, inasmuch as the round arch was a more noble thing than a straight beam of stone.

Then, the darkness before the dawn,—through the many gloomy centuries of barbaric work; and then, to look only at our own land, the gradually refining and enriching work of the Norman; the effect of the creation of Gothic, and the revolution that its pointed arch brought about,—the almost Greek-like work of the thirteenth century, full of religious feeling, hardly, indeed, seen at its best in England, for it was more advanced and noble in other countries,—nevertheless, replete with growing beauty and interest amongst us. Then the great time of the fourteenth century, when, for refinement of design and beauty of detail, our English architecture was second to that of no other country.

Then the fifteenth-century work, the very flower of the Gothic manner, with its development of the kindred arts of painting, of sculpture, stained glass, embroidery, and textile fabrics,—works all partaking of an architectural character.

And then the Renaissance, with its great artistic skill and exuberant richness, with almost lawless beauty, with some lack of restraint and a certain impatience of authority.

We may well review the varied images which such a vision calls up.

I shall not weary you by reciting any long list of examples of the great works of the great past, or by pointing out their merits,—you should know them well; but rather speak of some principles of the art that may lead us to see the shortcomings of our modern works, for their possible improvement. For we are not here to recount the great works of the past in our art, but rather to try and learn some lessons to be derived from the principles such examples afford. Before doing so let us, briefly, look at the building of the present day. There is little we can call architecture.

Where in our works, I would ask, are the architectural influences that would tend to educate the people?

Look at any of our new towns where there is not the presence of old buildings to redeem the general aspect of ugliness and vulgarity. It is not that the houses are merely destitute of ornament; there is the presence of vulgar and ugly ornament, so-called, in plenty, sometimes, indeed, in heavy and tiresome profusion.

The shapes and proportions of the houses seem to have come by chance and without design. The ugliest materials have been used, bricks of the poorest colour and of ungainly size, the roofs covered with cold-looking blue slates, also of too large dimensions. The details of the exterior, throughout, without interest, delicacy, or refinement.

But I have sketched enough of the outside of the kind of house which it is a positive pain to enter, so far as one's artistic perceptions are concerned. Inside we find the same poverty, or vulgarity, of design everywhere. The meanness of stained deal seems to have been delighted in, or, if it could be afforded, that ugliest of all woods "pitch-pine," with its coarse grain and hot colour. In colour, in form, all is without beauty. Nor am I thinking so much of those unhappy new towns amongst us which are devoted, I had almost said doomed, to manufactures and industrial works, where the sky is darkened, and all nature disfigured, where the enjoyment of any art is almost impossible. I am thinking rather of modern watering-places, and the like,—places devoted to leisure and to pleasure, chosen for their brightness of climate and beauty of scenery, but presently made hideous by a very nightmare of badly designed, and worse constructed buildings. In such new towns as I am speaking of, the inhabitants live surrounded by these buildings, to the great detriment of all artistic perception. Or look again at our London houses of a slightly older, and better, period. Our "long, unlovely streets" are without interest or dignity, a uniform dulness, at best, prevails, with but few exceptions. You may pass through many miles of our London streets without seeing one redeeming building, or even a part of any such building. There is a uniformity of dreary ugliness alike in Camden Town and Belgravia. Whitechapel is better, there are some old buildings there. Is not all this a satire on our civilisation and on our culture?

It is easy for you in these days to compare and contrast such modern buildings with ancient ones. If you have not travelled, nor even seen much of old places in England, drawings and photographs will have, broadly, shown you the contrast. And what a contrast it is. Now in what does this contrast principally consist? It is a difference in kind, not one merely of degree; the whole feeling, the animus, is different.

And here I am brought to speak of some of those principles and characteristics of architectural design which I would bring before you to-night.

They are: Refinement, concentration, true use of detail, symmetry, economy of material, contrast, avoidance of extravagance of manner, suitability, harmony, colour, work founded on that of the past, consonance with nature, lastly truth.

Refinement of Design.

Now if there is one principle in the practice of architecture in the present day which is chiefly wanting, it is, I think, the lack of refinement of design.

What is the history of architectural art but the history of refinement in the art? We have briefly glanced at this history in our own land. What was the one principle that led on from century to century, from style to style, but that of a true artistic feeling, the desire for refinement. Nature, our great guide, never stops in her refinement. We cannot gauge the infinite delicacy of nature, nor her redundance of life and its variety. Now it is in refinement for architectural work, that this expression of life is chiefly shown. According to the material and means at command, there should be the careful expression of artistic power to bring out, to the utmost, the expression of life.

This expression is a great principle of all art, and one to which limits can hardly be assigned. It should animate all your work. Every detail, not only as in the carving of natural ornament, however conventionalised, but in architectural mouldings, and the like, should express this, which is the highest gift of nature,—life. You see it in all good architectural work,—in the branching vault, and the graceful clustered column from which it springs; in the steady, sturdy, but thrusting buttress; in the varied modelling of carved ornament; or even in the mouldings of a cornice or of a string-course. Whatever, in architectural work, is endowed with the expression of death is bad art. Good art, on the contrary, is ever imbued with the expression of life. Look at a bit of decorative carving, it may be of the most conventional kind, as the so-called "honeysuckle" of the Greeks, or carved leafage of one of the great periods of Gothic art, and you will find this expression of life in the nervous curves, in the strength of the sturdy stem, and the delicate, reaching or twisting spray. The whole drawing and modelling, as well as the execution, express life. You may see this even in the common utensils of daily use. Compare a Greek cup, of the simplest kind, with its subdued, refined, but nervous and animated curves, with the similar vessels we may see amongst us now. The one is instinct with the expression of life, the other is dead, as the metal or the clay out of which it was formed. It is thus that man, into whom was breathed the breath of life, has, God-like, imbued his work with the expression of the Divine attribute.

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* A Paper by Mr. G. F. Bodley, A.R.A., F.S.A., read before the Students of the Royal Academy on the 20th inst.

Now, it is refinement of design that is such a great aid in giving this expression of life. It is not against this principle that much of the best architectural ornament is conventional, for conventional ornament should ever be imbued with the spirit of nature,—with its energy, its repose, its beauty of detail, and its breadth of effect.

You can work out this idea of refinement for yourselves in many interesting details, as in the refinement of curves, so remarkable a feature in our fourteenth-century Gothic; in mouldings, in all the great styles, giving refinement in the effect of delicate shadows; and in many other ways, as in the refinement of decorative colour, where gradations are gentle, and colours are delicately contrasted,—not, however, in any work in a manner indicative of weakness or incapacity; for refined work in no sense denotes weakness, nor vulgarity strength. True refinement rather denotes restrained power.

Nor is it in details only that the principle of refinement is of importance. The whole building, in its lines and mass, should have the same expression,—one rather of reserve and power controlled, than of any ostentation or display.

It is these expressions which give the charm to so many ancient works of architecture. They are the principles of nature.

I have spoken of the advance of refinement in the successive styles of the Gothic period. The same history occurred in the great Classic styles. It would seem that while an art is a living and healthy one it will advance, and, like the intellectual or moral condition of man, it will progress. Alas! that a time should come when it begins to decay, and at length becomes moribund.

The English woodwork of the fourteenth, fifteenth, and sixteenth centuries shows a school of art of a very remarkable character. It showed the utmost refinement of detail in delicacy of moulded work, and in most able carvings. It was hardly equalled by any work of the same character abroad. It is work well worth your close attention and study. Comparing these beautiful works with much modern woodwork, one cannot but miss the element of refinement. In the old work you will find the traceries were more or less elaborately moulded in different orders, while a modern,—and a very crude fashion of the day,—merely pierces certain shapes in a very elementary manner. It is but childish work at best, and is an instance of what one cannot but call the barbarism of much modern work, contrasting with the refinement of the ancient manner.

Let us glance for a moment at the reverse of this element of refinement. Look at what has been called the "Victorian style." I do not mean work designed, in an honest spirit, to meet the requirements of the times, that which tries to catch the true spirit of old work, but that shallow, conceited, and futile attempt to outdo the works of the past by coarseness and what is vulgarly called "go" in design. It is a manner that can have no lasting influence, one would hope, and we may dismiss it as out of court, except to point a moral. It is a manner the very reverse of that which I would lead you to follow,—that of a true and noble refinement in your art; that which you will find, in different degrees, expressed in all noble ancient architecture.

Concentration.

Another principle on which I would touch is that of concentration of ornament, especially for our larger buildings. It is one too much neglected in modern architectural works.

For the enjoyment of richness and beauty of ornament there should be a well-designed concentration of it. The eye wearies of, and the mind fails to be interested with, a monotony of richness.

Design your building in good proportions, that is with the proportion that has an expression, suiting the character you wish to give your work. Then enrich the chief, and most important parts, with carefully-designed ornament, rather than sprinkle the whole with it. Here, of course, the scale of the building dictates the character, and it is no fault for a small one to be enriched all over: it is, as it were, a detail itself. The surrounding buildings may give the necessary effect of contrast. But for large and monumental works, you will find this concentration of ornament a sound and judicious principle. It is one of the characteristics of the best old buildings.

True Use of Detail.

Another principle of which I would speak is that of the true use of detail. Now, the use of detail is not so much in order to show variety, or beauty, of design, but that it may enhance the expression, whatever that may designedly be, that is to be given to the whole building. It is surprising how the use of detail, skilfully dealt with, may add scale to a building and enhance its general effect. It is a great, but manifest, error to suppose that by boldness of detail you make your building look large. The reverse is eminently the case. This is obvious; nevertheless, much modern Gothic work, and not work in that style alone, has been ruined in effect by largeness, if not coarseness, of detail. When your mouldings are large their curves should be especially delicate and subdued. The delicacy of the shadows prevents the effect of any coarseness.

Not that it is only detail which, carefully used, gives scale to a building. The multiplication of parts is an arrangement of much use for this purpose. You know how skilfully this was done in Mediæval and in Renaissance buildings.

The study of the best designed ancient works will make the intention very apparent. It is a point, again, that you can work out for yourselves, in studying such buildings. Compare, for example, Milan Cathedral with our Westminster Abbey, or with York Minster or other great Gothic churches. To give scale by breaking up a wall into stages, as by arcades and the like, is of frequent occurrence, and is of much effect.

Symmetry.

Another principle, on which I would touch, is that of symmetry or balance in design. It is one, for the most part, applicable and of chief use for large buildings and those of monumental character; nevertheless, a house of moderate dimensions, planned on a symmetrical arrangement, may have a repose and a dignity fitting many sites. Our large Elizabethan houses owe much of their effect, externally, to this arrangement. It is not a Gothic idea; nevertheless, even for this style, a forced irregularity is always to be avoided. There is no plan for a large house, standing by itself, more dignified and quiet in effect than one with three sides of a quadrangle,—the entrance with its high porch marking the centre, and bearing, it may be, an enriched panel with shield and other sculptured ornament. The two projecting wings may be of more or less projection, as circumstances dictate.

In these symmetrical designs occasional variation from exact balance may well be brought in, as in the somewhat varied positions or sizes of windows, and the like. The general balance may be kept, but, like an unexpected note in music, the variation in no way destroys the general effect of harmony. Symmetry of design denotes care and pains on the part of the designer. It is a courteous manner and has much to recommend it. Certainly it is a principle founded on nature. It was in constant use in old days.

Another point on which I would briefly touch is that of a nice economy in the use of material. It is again another point of refinement. The almost brutal strength and ponderous use of material of the Egyptian work, especially as in the Pyramids, has an unpleasant sentiment. Contrast this with the great Gothic buildings in which (with no economy of thought, or of skill), through delicate ribs of curved or straight stone, the weight of the hanging vault is held, as if by magic, and passed down into the ground,—all with the nicest economy and without any undue waste. Each member does its work. It is Christian liberty and carefulness, contrasted with Egyptian slavery and its waste of power.

Roman work had some of this Egyptian-like waste. But I must not enlarge on this point, which opens out a large field of observation; one word, nevertheless, I would add, and it is this. Engineers make their nice calculations, of less and more, and tell us this or that "will stand." But good architecture is not only "built to stand," it is built to last from generation to generation. It is no waste to build in such a manner that the eye and the mind are satisfied that centuries may see the building as we see it now,—that, if but properly tended, and not cruelly dealt with by the more ruthless hand of man, the gentle, slow, natural decay of time will leave the inheritance well nigh untouched.

Such strength, combined with a nice economy, should be our aim in designing buildings.

Contrast.

Another principle I would speak of is that of well-contrasted work. In all the best architecture you will find a noble simplicity of design, due breadth of surface, contrasted with delicate detail. Neither has it its full value without the other. How well the delicate Gothic traceries and niche work, and the lines of the richly-carved cornices, contrast with the broad surfaces of the massive buttresses and the smooth ashlar of the walls. It is thus in nature you may see the delicate foliage and the fragile flower contrasting with the buttress-like rocks, smoothed by the hand of time.

Some of the best effects of Gothic work are obtained by the use of thick walls and small detail, as in windows where the broad splay is finished by a slender shaft, giving a fine line of light and a delicate shadow, contrasting with the uniform light on the wide breadth of surface of the splayed jamb. Here, again, you can work out this principle for yourself in many ways, both as shown in examples of the past and in designing new buildings or their details. In many churches in the South of France we see the capitals throughout, both large and small, elaborately and richly carved, while the rest of the building is of the sternest simplicity. The capitals form, as it were, rich bands, contrasting with the plain walls and piers.

Again you will find that the whole practice of mouldings is derived from the sense of contrasted light and shade. Vigorous, at times even harsh, as in some early Gothic work, the system of mouldings became gradually refined to the most gentle gradations of light and shade, the simple roll moulding eventually turning into what is termed the "wave moulding," with the most delicate effect of light and shade on its surface.

Or, again, in carved work of the great times, the delicate lines of light on the ridges and the edges of the ornament, the half-shadows, tender and slight, on which the ornament seems, as it were, to rest, then the sudden deepening and darkening of the background, to throw out, in strongest contrast, the chief points of the ornament into greater light, to rule over the rest. Well considered and ably executed, contrast is seen everywhere, full of tender grace or decided vigour.

The carver has delighted in the effect nature affords everywhere where there is light to see its subtlety. It is our loss that here, in England, our dark days are so frequent. The want of light has, no doubt, a depressing effect on art. Let us the more carefully enlighten our mind's eye with the thoughtful contemplation of the works of other and sunnier countries, and of brighter days of art.

Avoidance of Extravagance of Manner.

Another suggestion that I would make is a negative one,—the avoidance of extravagance of design and manner. For example, avoid extravagant proportions. One has seen too much of this, of late, in Gothic work. A shaft only two or three times its diameter in height is surmounted by a capital out of all proportion to that shaft. It is an ugly affectation, and in no way commendable. It is an exaggeration that becomes a caricature of good art.

There is one kind of strongly-marked proportion, however, that we need hardly fear to carry out in these days. I mean that of considerable height. The controlling exigencies of economy too often prevent our churches, for example, from rising into stately and inspiring proportions.

You know the high proportion of that, perhaps, the most beautiful of all Gothic churches in the world, Westminster Abbey,—the most beautiful as regards the architecture of the interior.

The proportion of Westminster Abbey, that of three squares, is excellent, and without any undue exaggeration of height.

The extravagance of manner I have spoken of more often lends itself to stumpy proportion, without grace or beauty. It is, like other extravagancies, to be avoided.

Suitability.

Another principle I would bring before you is to suit your design to the place it is meant for, and to the surroundings among which you are to build.

With our old buildings in the country one often sees an instinctive harmony with the sentiment of the aspect of the natural scenery, or, it may be, a wise contrast with it.

It was not apart from this refined feeling that for an old Gothic church, built among hills, you will generally find a low broad tower, with an affinity for the masses of surrounding scenery,—while, on the other hand, on the long, low, level lands the pointing spire will have been lifted in contrast to the horizontal line of the plain,—a point of relief which the traveller's eye may rest on, as he travels through the monotonous level country. In towns you may take pains, in some way, to assimilate your building to those of neighbouring ones of former times, if there be any of sufficient interest to command such respect.

It is to our loss that so many towns, in which we may have to build, are destitute of any character with which we can harmonise our work. Nevertheless it should be done where possible, not only in the use of local material, but in designing in the local manner, and in harmony with the surrounding buildings. One sees examples of what we must call "bad manners" in this way. The surroundings have been ignored.

And here let me say that we need not go abroad to find a style in which to design buildings in England. Let us keep to the *genius loci*.

Both in Gothic and in Renaissance buildings among us there has been too much copying of a foreign manner, unwisely imported from the Continent. Our own English architecture is second to none on the Continent for beauty and poetry of design. If abroad the architecture is more grandiose, yet it often lacks the refinement and the poetry of sentiment of our English work. Though "art speaks the tongue of every clime," yet, in a sense, we may have a patriotism in our art. You know how long a list of admirable English works one might enumerate; each county with its hundreds of more or less beautiful churches, and often still more beautiful remains of ruined abbeys; each city with its more or less stately cathedral; our universities of Oxford and Cambridge, places unique in the world for venerable collegiate buildings; our great historical mansions, Haddon, Burleigh, Kirby, Fountains Hall, Hardwick, Longleat, Bramshill, Montacute, Temple Newsam, and others; lastly, the refined and simple beauty of our old homesteads, and even cottages, on many a country side. Let us be loyal to the traditions of our beautiful English architecture.

Harmony.

Another principle is an obvious one,—that of harmony, not only of style, but of character and feeling throughout a building. No Eclectic School which mingles styles incongruously will ever be long-lived or successful. The result, if not one of continuous discord, affords but occasional harmony. It is true that certain styles, as Gothic, lend themselves to strong construction, while Renaissance may be more consonant with great richness and delicacy of detail; as, for example, in plaster work and the like; but there is a risk of discordant character. It is better not to attempt any such mingling of styles in a complete work, however good the effect of different styles, combined, may be in an historical building, which has been added to from time to time. The mind is satisfied with such an historical building, but it is irritated by the needless conceit of combined styles in a new one.

If you look at any complete work of the great periods you will find that they have a unity of feeling, and a breadth of effect, stamped upon them. Look at our abbeys of Westminster and Tintern. I mention these, for you know them well. The same character is given to the whole building, in a marvellous degree. Each building expresses, in its own distinctive manner, the sentiment desired, and there is a true artistic breadth of effect and of idea. You will find this so in all complete buildings of the great periods. They are interpenetrated with one idea, though there is the utmost variety of detail.

Colour.

Another, and an important part of an architect's work is connected with *colour*, whether in the use of marble or other constructional colour, or in painting.

A fine eye for colour is a natural gift, as much as a fine ear for music, but the love of good colour may, no doubt, be caught from the teaching of nature and the great schools of painting, chiefly those of the fourteenth century, and later on. That there was a great school of decorative painting in England in the fifteenth and sixteenth centuries is seen by the painted roofs and screens remaining. Those without sufficient knowledge are apt to speak of the colouring of the Middle Ages as crude and inharmonious, or, at best, as of little artistic value. There can be no greater mistake. The wall painting has chiefly perished, but enough remains on woodwork to show how refined and beautiful the works of decorative painting were. In all the great periods of art there was, indeed, the keenest delight in colour. Take alone, for example, the stained glass of the successive centuries of the Middle Ages. It is an important part of architectural decoration, especially of churches, college halls, and similar places. Look at the deep-toned glass of the twelfth and thirteenth centuries, the gradually refining glass of the fourteenth century,—silver setting, as it were, of jewels; the figures rich and splendid in colour. Then the still fairer glass of the fifteenth and sixteenth centuries. Figures, as of painted statuary, of rich, but subdued colour, standing in tabernacle work, of wrought silver touched with gold, the delight of all beholders. Is it for us to think lightly of the colour works of the Middle Ages when we, in these days, have filled nearly every one of our cathedrals in England, and most of our churches, with glass so crude, so harsh in colour, that to see it for a moment is a pain and a shock to all our artistic feelings?

In this beautiful art of glass-painting, however, one begins to see real improvement in the works of some, though but few, artists.

Before I pass on to other matters, I would observe that the history of glass and other painting shows the same story of progress in refinement (pardon the refrain) as we have seen took place in building. The early work was powerful but crude in colour, the later ever becoming more and more refined; and this so much so, that presently the whole scheme and idea of the decorative treatment of the building was gradually changed. For the early building had its walls white, with but little decoration, and its windows of dark richly-coloured glass.

By the time of the fifteenth century this scheme of colour was completely changed, and a nobler manner prevailed; the walls were painted with figures and subjects in dark rich colour, of the beautiful type of full but harmonious colour that we see in many old German and Flemish pictures, and the windows were, for the most part, of silvery white, with but little and that subdued colour.

It was a complete revolution. It was one towards refinement.

Let us turn for a moment to a very different branch of this subject of colour. However poor the architectural character of our houses may be, beauty of colour may be obtained for our rooms. There is not enough intelligent interest spent on the subject of the decorative effect of our houses. I cannot but express the hope that they may be made more beautiful in colour, and that our rooms may show not only a jumbled collection of old things, however beautiful these may be in themselves, but that intentional design, and harmonious architectural character, may be given to them. In the modern decorative treatment of rooms, even those of some dignity, one too often sees mistakes of the most evident kind. For example, it is the frequent modern practice to colour the cornice of a room as if it were part of the ceiling; so if the ceiling is white the cornice is white also, though the walls and woodwork be of colour. Now surely the cornice is the crown of the wall, and not a part of the ceiling. The architectural value of a cornice in a room is to soften off the harsh line that we get without any projecting moulding. This effect is obviously lost if the cornice is coloured like the ceiling, and not like the wall. I would just say, before quitting this part of our subject, that while we now often see "dados" introduced, the use of the frieze is too seldom adopted. Yet it is a far better effect to have a well-designed frieze and no dado, rather than to have a dado and no frieze. The frieze, and not the dado, was the earlier arrangement. Let me say, in passing, that we should do better, in our domestic work, to follow the style of the Renaissance rather than that which is called "Queen Anne," and which is a very inferior manner at best.

Again, there is a fashion for a papered dado. This brings out with undue prominence the poor, thin, line of the dado moulding.

Now this dado moulding or "chair rail" is, as it were, the cornice of the dado, and the whole should be of the same colour. Above this dado moulding there may be a wall-paper of good pattern and colour. Such a paper is best when it is of two or three shades of the same colour, and the spotty and unarchitectural effect of a variously-coloured pattern is avoided. Wall-papers were the successors of damask silk hangings, which were usually of one colour, or different shades of the same colour. These silk hangings, it is true, were the successors of tapestry of varied colour, but the pictured scenes of tapestry take one into a higher, and altogether different, kind of decorative effect. There is nothing in common with tapestry in them, except that both are for the clothing of a wall.

Again, one sees other palpable mistakes of colour, such as the use of the "black pointing" of brick work. We need not add to the gloom and dinginess of our buildings by its use.

But what I would chiefly urge on this subject is, that you should not think decorative art in any way beneath your serious attention. Here, again, look at the works of the past, of the great schools of Europe. They will be of more use to you than the imitation of Japanese or Chinese work, the fashion of the day, however ingenious it may be.

Work founded on that of the Past.

Another principle is the founding designs on the works of the past.

Sir Joshua Reynolds said, "The more extensive your acquaintance is with the works of those who have excelled, the more extensive will be your powers of invention, and, what may appear still more like a paradox, the more original will be your conceptions."

This is, I think, eminently true of architectural design. You may well found your design on some previously executed work that has won your respect and admiration, but you make it your own, your mind's eye seeing it, thus or thus, different, wholly altered, from that which produced the idea. It is thus that art hands on, in the tradition of art, the spirit of it, which is immortal.

Consonance with Nature.

Another principle is that of harmony and consonance with nature.

We have incidentally spoken of nature as the guide in all art.

It should be eminently so with the creative art of architecture.

Though our art, like music, is not an imitative one, yet its characteristics should be those of nature, in the spirit, though not in the letter. It is the strength and the delicacy, the refinement and the richness, and the other great attributes of nature, which we should endeavour to embody in our works, rather than any exact imitation.

It is thus that art should be consonant with nature. Wordsworth wrote,—

> "To the solid ground
> Of nature trusts the mind that builds for aye,
> Convinced that there, there only, she can lay
> Secure foundations."

In our art, from the rough, rock-like foundations, to the highest and most delicate pinnacle, all should be in harmony with nature and her work. It is the law for all art, at once the law and the Gospel.

Truth.

Time suffices not to speak of other principles of our art, and yet there remains one great and leading principle of this and all art, that which should indeed be first, the principle of *truth*. Let it have here, as in a procession of state, the most honoured place, and be the last named of our principles.

Of truth, as expressed in architecture, much has been written, and written well, more especially by Mr. Ruskin, to whose teaching we owe so much in the whole field of art. Truth is an essential element of good art. I need not dwell on this part of our subject; nevertheless, what are many of our new street-fronts in the City and other buildings elsewhere rising around us but examples of most untruthful architecture? Iron columns and iron girders are concealed by stone columns and thin stone friezes, and the like deceptions. It is an unpleasant, and, indeed, a wretched style of building, without truth or dignity. Should a fire try the nature of the work the writhing columns and bending girders will soon show that they are found wanting in that first necessity of good building,—stability,—and the disguise will be manifest.

To conclude, let me say that architecture and all art should be animated by some great and leading principle. Religion is the highest. The noblest buildings in the world have ever been those consecrated to her service. We see this alike in the Pagan temple and in the great churches of Christendom.

After religion, civil or national dignity should call out the expression of high artistic power. Then the domestic feeling, the house, great or small, built for a family, in successive generations, to abide in, the house that should be handed down as the shrine of domestic honour; and, lastly, honour to the departed, as in sculptured monuments and memorial buildings. For art should be delighted in, not for itself alone, but as the expression, in a lasting way, that can perpetuate the feeling expressed.

Art requires, as it were, the salt of noble sentiment to keep it elevated and pure.

How far any revival of a great school of architecture is possible is a question. That there is a strong archæological feeling for the art is certain. It is an age of travel and the great works of former days, combined with their historical associations, have impressed themselves strongly on many minds.

The want of unity of feeling, as compared with other times, is one serious impediment to the formation of any school of the art. Is any such unity possible? Is any such school of architecture possible without such unity?

But consider that it is the "animus" with which you design that is of real import; that whatever style you are led to work in, let your manner be courteous, your expression that of truth, and your aim to do the right thing for the building you are designing.

No doubt our work as architects in these days is one of difficulty. It is an age of science, not of art; architectural tradition has been cut off, or rather, alas! we inherit a century or more of bad tradition.

We have great facilities, in these days of easy travel, for seeing old buildings. Or, to take the subject of decorative art work generally, our collections and museums are numerous and admirable. Are we to make such use of them as may lead to better designs, and a more intelligent interest in such decorative work?

Such collections ought to bring about a more healthy state of public taste and inspire us all with a desire to do good work, thorough work, both awakening interest and cultivating it.

Let us remember that what we may call the "architectural arts" may have a considerable bearing on the industries of a country. Attempts at artistic manufacture have been brought before the public. Are they to lead to better things, or are they only the fashions of a day?

But I must end with one more word of advice. Have enthusiasm for your art in all its branches, rather than an ambition for your own success, and better work will be done. There are some signs of the dawn of better things, amidst the general gloom, and we may hope that a more intelligent interest may yet be taken in architecture, and in things that belong to architecture.

Time was when she was the queen and the mistress of all the arts. Is it not for our unfaithfulness that she has abdicated her throne?

Teak.—An interesting paper on "The Teak Forests of India and the East, and our British Imports of Teak," was read by Mr. P. L. Simmonds before the Indian Section of the Society of Arts on the 20th inst.

IMITATION THE MEANS, NOT THE END, OF ART.*

On more than one occasion we have lately heard it stated within these walls, and on no less an authority than that of our President, that the work of the sculptor-students has shown in recent years a considerable and sustained advance. This opinion, which is confirmed on all sides by current criticism, is one which cannot fail to be extremely gratifying to those who take a real interest in the plastic art.

If we examine the causes of this advance we find it due, I think, to a closer study of nature than was recommended in the last generation and to the increased opportunities for that study which are now open to the student in our public Schools of Art.

This closer study of nature, leading to the production of work of a more realistic character than used to be admired, has, of course, not been confined to the schools of the Royal Academy.

The annual exhibitions of modern work, both here and in most foreign countries, but especially in France, have shown that artists all over the world have been aiming at a closer imitation of nature than was usual fifty years ago.

The pursuit of exactitude, indeed, has been carried so far as sometimes to exceed the bounds within which this imitation should properly be confined. It is this universal tendency towards realism in the most vital school of recent sculpture which has suggested the central idea of my lecture to you this evening.

In the face of this general movement I feel it is necessary for us to ask ourselves what the bounds of imitation are, and how far this devotion to realism is praiseworthy.

We all admit that a complete subjection of our aims to it would result in the production of work worthy only of a waxwork exhibition,—that is to say, ingenious and mechanical reproduction of objects, which might amuse us for a moment, but which would completely fail to satisfy our artistic cravings.

The fact that sculpture, or the formative art, is in one respect essentially imitative is, I think, a source of considerable danger to students of it, and the tendency to which I have referred, which has shown itself of late in all the arts, namely, the search for resemblance to individual forms of nature, although a step in the right direction, may lead to serious evil, and sculpture be degraded by a misconception of the ends of art.

In the history of art there have been epochs which we, who are at a sufficient distance to judge fairly, do consider as debased and bad in various ways.

The character of the work of these epochs has generally been due to the misuse of art in the attempt to make it express what was not within its field, for the extension of this field was evidently considered to show cleverness and originality then, as in our day.

I need, perhaps, only recall to you the work of Bernini, and the sculptors who followed him, to show to what an evil end extravagance can lead sculpture.

The Trevi fountain in Rome, erected from the designs of Niccolo Salvi in 1735, consists of a large florid architectural façade, from the centre of which a colossal figure of Neptune drives his car and horses and attendant Tritons over a mass of rocks and streams of real water, the whole composition covering an area much larger than this lecture-room. This work has been well described as a "pompous confusion of fable and fact, gods and ædiles, aqueducts and sea-monsters." But the most remarkable example is near Naples, and represents the classic fable of Diana and her nymphs discovered bathing by Actæon. This work cannot, of course, be called a group. It is situated in a palace garden, and consists of hundreds of tons of rocks and a flowing stream, and at least ten or twelve marble nymphs scattered about, all of them more or less agitated at being perceived by the shepherd Actæon in the distance.

This is a characteristic example of the use to which sculpture was put during the eighteenth century, in the attempt to make it rival the scenic effect produced by a picture. It was an effort in the direction of realism, in so far as the figures were relatively placed as a number of figures in nature might be.

In our own Westminster Abbey we have sad specimens of this utter absence of the sense of what is within the range of sculpture, for even a man of great genius like Roubilliac could not resist the temptation to make his work pictorial, going so far as to carve marble clouds above his statues. The pursuit of novelty, which is also a characteristic of our own time, is no doubt an influence which carries art further and further in new directions, and now especially in the direction of realism. Let us certainly have truth to nature, for art cannot be good without it, but let us not merely aim at the imitation of individual forms without thought or selection merely as opportunities for showing the dexterity with which we can handle our material.

Sir Joshua Reynolds, in one of his admirable discourses, says,—"Imitation is the means, and not the end of art." These are words which it is important to recollect, for they contain the truth of the whole matter, and should be a guide to you at your work, either when studying from nature or designing without it.

In this age of scientific accuracy, the artist has especial need to keep before him the means and end of art; for as yet that vigorous child of our century, modern science, although she ultimately will help him, does little but confuse the artist. She shows him so much in nature that he knows not what to select.

The time was when the artist could impose upon the spectator to a considerable extent, and insist that such and such a representation of nature was true, and did not violate Nature's laws.

He might, in fact, draw on his imagination, and by new combinations construct works that excited amazement. But I need hardly trouble to remind you that matters are now changed; it would be impossible nowadays for a painter to produce works so far removed from realistic forms as were those of Fuseli or Blake.

Science now, with the sun's immediate aid, makes an accurate drawing of an object in the fraction of a second, and any artist who attempts to make a drawing by hand of such an object is brought to task, and the accuracy of his drawing tested by comparison with the work of the unbiassed eye of the camera, which, although it may not give the proper values of tone, is accurate as regards scale and position in its transfer to the picture of the minutest details.

However hard a trial this may be to the artist, it is beneficial, and has its lesson; it teaches him to draw more truthfully, while, on the other hand, it proves to him that art must have an aim of its own, and that that aim cannot be mere copying with scientific exactness.

This was fairly demonstrated in a lecture given in this room just three years ago, when the American photographer, Mr. Muybridge, exhibited a series of instantaneous photographs taken of a horse in rapid movement. There were, I think, about twenty outline pictures taken consecutively during a single stride of the animal when at a gallop, from the commencement of the stride to its completion, so that it was possible to follow the action of any limb through its entire movement, until the same movement or step began again. In each of these twenty silhouettes, for there was no detail within the outline, the action of the limbs at a particular instant was exactly given, yet scarcely one of them gave to an observer the impression of the action of a horse; most of them were quite ludicrously false to the optical effect. The grace and rhythm of movement of a gallop were not in the least expressed.

The fact is that the impression the eye receives of rapid movement is a combination of successive actions, and to give that impression in a motionless form, as in a picture or statue, more than one instant of the action must be rendered, and the different limbs arranged to express those different successive instants.

It is, I think, an acknowledged fact that it is much easier to give apparent movement in making a drawing or statue of a horse, or any quadruped galloping or running, than in attempting the same with a man running. The latter is liable to look as if suspended in the air like a pair of compasses. With two limbs it is possible to express two moments of a stride, but that is a limited power; whereas in the quadruped four movements of the stride can be suggested, and these will more adequately express the successive positions of the legs during the stride.

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* A lecture by Mr. Hamo Thornycroft, A.R.A., delivered to the students of the Royal Academy on the 19th inst.

The more the student has observed the action of horses the more will he be able to know what moments of action to select in order to give apparent movement.

Science teaches man how to make use of the forces and laws in nature, and shows him their perfect consistency and harmony. But it is by means of art that the ever-changing and evanescent forms and effects in nature, which are constantly before man, and which astonish and perplex him, can alone be arrested and permanently expressed. Art can thus interpret nature to man and teach him to perceive her beauty.

The art of sculpture is a language whose special province is the expression of beauty of form. Its secondary province is the expression of sentiment and character. In order to remind you of the force of this language as an exponent of the beauty of the forms of nature, I will only ask you to call to mind almost any authentic piece of Greek sculpture, but more especially the statues from the pediments of the Parthenon in the British Museum and the Venus of Melos in the Louvre. It is by the imitation of nature's forms that these works speak to us.

The extent to which this imitation can be be carried is the great difficulty the sculptor has to meet, and is the subject which I now wish to consider.

The question is, what are the forms in nature which present the best material for the sculptor's language, and how closely is he to imitate them?

The forms which constitute *nature's highest* organism, man, are, of course, the first and most important; next comes man's raiment, or that which clothes him; and then the forms of the lower animals. Now, how closely we are to imitate the forms in nature is extremely difficult to say; for the reason that the possibility of imitation is almost unlimited by certain mechanical methods, such as by moulding directly from nature and casting. A cast from nature, however, as we admit, is not satisfactory, not altogether because it is a mechanical cast, for a slavish copy made by hand might have a like effect. We should feel this latter to be a wonderful achievement and a feat of skill, yet there would be something wanting. There would be in the work an entire absence of the individual impress of the sculptor or his school, and in its place a preponderance of the individual peculiarities of the particular model cast or copied, scientifically interesting, but not artistically so. Indeed, we should not allow it to rank as a work of art.

At the other extreme it is possible to generalise and to imitate only the structural and essential forms, eliminating the individual and accidental in favour of the usual and typical, and this is the fault to which English sculpture in the earlier part of this century was particularly liable.

So we see that two dangers lie, one on either hand of us,—the temptation to produce an absolute copy of nature, and the tendency to generalise until our work is so conventional as to be devoid of all value and character.

These dangers more especially beset the sculptor in the branches of his work other than portraiture, in which the individual and accidental are obviously essential.

But by what means are we to use the forms of nature to make our language of sculpture most eloquent and intelligible, and to fulfil the high aims which we consider as its province, the expression of beauty and grace, of sentiment and character?

Obviously, we must follow the forms of nature closely in order to interest the spectator, selecting those we think best for the purpose before us, combining them to make a harmonious composition, but never making a combination which would be impossible in nature, unless it be in the case of some well-recognised convention, such as when the wings of birds are attached to human backs to express super-human powers of movement. But for such deviation the artist must always have an intelligent reason.

Sometimes, owing to colour or transparency, the effect of nature is not at all represented by form, as, for instance, in the human eye, to express which the sculptor must flatten the convexity of the eyeball, or, if he wishes to make a realistic portrait of the eye, he must cut a cavity in his model of it in order to form a shadow indicating the dark of the pupil.

A mass of hair which is partially transparent cannot be represented by means of a solid material of the same size. It must necessarily be made less and often thinned down in order to indicate the form beneath.

A sculptor ceases to imitate also, when the form is such as to be unsuitable of reproduction in his material, perhaps impossible to be wrought out in it; or, at any rate, requiring an endless amount of labour to achieve an end, which may again be easily frustrated by accident. It may, indeed, be taken as a rule that we should not attempt in sculpture forms and effects which can be more adequately, and at the same time more permanently, rendered in another art. What may be a wonderful feat of labour and painstaking may prove at last to be an execrable work of art.

I remember, when a boy, being taken to see some famous china-works in Staffordshire, where, in the show-room of the establishment, there were arranged all the sample cups and saucers and prettily-painted dessert-dishes, and such like, but where, in the place of honour, trembling beneath a high glass-shade, sat a perfectly white bird of Paradise, life-size, in porcelain china. This was pointed out as the wonder of the place. The delicacy of the workmanship I can well recollect as extraordinary, for every detail of the elaborate creature had been built up bit by bit, and the long tail hung like a delicate frosted twig, and all in burnt china clay. I was told that it was not quite finished, as the workman had died before he could complete it, and that to do so had been the one idea of his life. The story seemed sad to me then, but it seems sadder now. Only a few months ago I was in a little china-shop in Hammersmith, looking over some odd pieces of ware, when in one corner I noticed a big, dusty glass shade, and under it,—dusty, too,—broken, and without tail, sat my old elaborate friend, the china bird of Paradise, but only a mere shattered skeleton of his former self. I thought of the good fellow who made it, but never completed it, and I felt glad that he could no longer see it.

This story seems to me to teach a lesson to the sculptor to be careful not to spend his time on the representation of what can be more readily and permanently expressed in another art.

If a work in sculpture is fragile and easily damaged, it might have been a better subject for a painter, on whose flat canvas can be put the lightest, and most delicate, and elaborate object in nature.

Of all forms, the nude human figure is the most essentially sculpturesque; for the reason that it consists of broad smooth surfaces, generally convex, undulating one to another, and sufficiently large, at least in the size of nature, to have strength to be permanent when imitated in the sculptor's brittle material of marble. So in this respect there is little danger in the treatment of flesh; but there are other difficulties, as we shall see presently. But I wish to insist to you on the extreme value of broad flesh forms, and the exquisite gradations of light and shade which the nude presents to you. You must look upon these delicate gradations as the most beautiful words of your language. It is here alone that you can compete with, and I almost venture to say surpass, the power of the painter. He cannot express these forms so beautifully and absolutely as you can. Compare for a moment what you may happen to consider the finest pictorial rendering in the world of the nude human figure; compare this with the Ilyssus, the Theseus, the upper part of the Venus of Melos, the Hermes of Praxiteles, or the Torso Belvidere. I might, but I will not, detain you with a longer list, and I think you must allow that sculpture here obtains the higher position. The painter will be generous enough, I hope, to concede to us this advantage; for our field is contracted, whereas his includes almost all objects and effects, and extends as far as the eye can see.

When the figure is draped, it is only under peculiar circumstances that sculpture can retain this mastery, only when the covering is such as not to destroy the form below it, and when it is in itself beautiful in form, and can take lines that are harmonious with the figure.

We can see an instance of this in the lovely group of the Fates, from the Parthenon, where the flesh forms are covered with a thin muslin-like drapery, arranged and treated with consummate skill, so as to still reveal the figure and the movements of it. In these draperies the effect of nature is so truthfully represented in the detail and small forms that the spectator, in his admiration and excited interest, overlooks the liberties the sculptor has taken with the manner in which the larger folds of the draperies fall. These he has kept close to the limbs, where, in nature, they certainly would fall away, and so would obscure them. The form of the folds in nature could never be exactly like these carved ones, but the effect produced is like that which nature might be imagined to assume under the most favourable conditions.

In looking at this group one becomes convinced that the sculptor who made it had an ideal within him which he sought to express by the selection and representation of the most beautiful forms in nature at his disposal. He translated into the permanent material of marble nothing without the leave of nature, but accommodated nature to the material.

Although the large forms of the figure are visible almost throughout the group, still there is no appearance of scantiness of drapery, so perfect is the judgment with which the folds are arranged and massed. Even in its present fragmentary state, headless and almost armless, it seems to me by far the most beautiful group in the world; but how magnificent must it have been when, above the delicate drapery, rose the two lovely Greek heads side by side, one sympathetically touching the other, while a little lower, contrasting with the minuteness of the muslin folds, the generous rounded arms added the proper complement of flesh and a balance of mass to the composition of the group.

If we attempt to get an effect similar to a Greek statue or relief by placing a carefully-made muslin Greek dress upon a living model we soon discover the impossibility of it. This can be made a fair test, for it is possible to obtain dresses that are practically the same in form and texture as those used by the Athenian sculptor; and it is also possible, in England, to obtain models that are physically not unlike the Greeks. But the effect, I say, cannot be thus produced for the reason that the sculptor, in making the masterpiece of art to which I have alluded, selected and modified the folds of the real dress. He realistically adhered to the forms of nature with regard to the flesh, but not in the folds of garment. These are kept in subserviency, yet not allowed to appear meagre and thin. The projection of the highest part of the folds away from the flesh is generally true to what it might be in nature, but the shadows are deeper. This is a convention, of course, arrived at, no doubt, in order to express the feeling which the spectator has when looking at nature, of the presence of the figure beneath the garment, which presence is given, in a living figure, by the slight movements and swaying of the folds, just revealing from time to time the important and structural forms.

Since the Greeks employed such conventions, and with such admirable effect, and since, I argue, these can legitimately express nature, we may surely be forgiven if, in our effort to represent the impression which the human figure gives us, we select and modify the garments worn nowadays.

Before the reign of Charles II. it may be said that in England all costume represented in art was that of the time in which the work was produced. But during the reign of that monarch it became customary in sculpture to represent a person of important position, dressed either in the toga of the Roman civilian, or, if he were a soldier, in the dress of a Cæsar. This peculiar custom has been revived from time to time up to the beginning of our century, as we may see by many of the statues in the private squares in London, but of late there has been a bold stand made against it, and there at last seems to be a hope that we may again have sculpture that shall be a real representation of an Englishman as he lives.

All good art is representative of the age that produces it; so, manifestly, in representing that in which we live, we ought not to drape our statues as either the Greeks or Romans did. We know that the dress of the figures forming the procession of Athenians in the frieze of the Parthenon was the daily dress of Athens, and it seems to me that it is our duty to express in art the dress of our time, even though it may be difficult in many cases to persuade ourselves that it is æsthetically beautiful. We need not follow the fashion from year to year. I would go so far as to advise that we should choose the dress for a statue (if it is an ideal and yet modern subject) from any costume that has been customary during any part of our life. We ought, at any rate, to have seen the dress worn in its home.

I would like to remind you of the numerous fine works of sculpture which have been produced in France of late by the just treatment of contemporary costume.

Although we are sometimes startled, and annoyed perhaps, at the extremes of realistic work often to be seen in Paris, yet one cannot but admire with enthusiasm such portrait statues as those by Chapu and Delaplanche, such allegorical groups as those by Barrias, in which modern costume is boldly employed.

Several of these groups are commemorative of the defence which certain cities in France made against their enemies during the war of 1870.

Subjects of everyday life have been modelled with a fine judgment and with success, by Coutan, Albert-Lefeuvre, Pech, and others. Lefeuvre's statue, entitled "Bread," is an excellent example of a realistic yet sculpturesque rendering of a robust and handsome young peasant woman carrying loaves of bread.

We find that the most sculpturesque garments we possess nowadays are those in which fashion has least force, and where the dress has adapted itself most naturally to the occupation of the wearer, and the longer it has been worn the more worthy it is of your study. The folds instead of falling accidentally, first in this direction and then in that, have discovered their proper place, and fall there with a certainty that has become a principle.

Even the thickest and most stubborn of materials, such as leather, becomes valuable to the artist when worn long enough; it is not necessary to accentuate the patches and holes and ugliness,—these are accidental, while the folds are essential. It is quite extraordinary how the human figure will assert its form through clothing after long wear. The effect assumed is, of course, the typical, and for that very reason of most value to the sculptor. In this way a statue can be clothed, and the form still be sufficiently visible to retain its proportion and action.

The proper and true depth of fold and consequent shadow in the various parts of a garment covering the human figure can only be studied in that which is well worn. To attempt to do so in clothing that is at all new is soon found to be hopeless.

Even in London one sees not unfrequently, among the navvies, or those workmen who dig out the foundations of buildings, men who look sculpturesque in their wrinkled corduroy trousers, buckled in at the knee with a strap, with a loosely-fitting shirt, soft and pliable, not made into a hard, white board, to be worn in front like a sandwich-man's placard. The navvy's dress is adapted to his work, and is, we may conclude, but little affected by fashion.

As an instance of an improvement in costume in our own time,—an improvement, by reason that it is better adapted to the occupation of the wearer,—I will cite that of the cricketer, who, fifty years ago, when playing an important match, did not wear on his head the close-fitting cap now customary, but in its place wore that tall cylindrical box with which we are so well acquainted, and which we designate a chimney-pot, but which our friends the Americans prefer to call a long-sleeved hat.

The countryman is still in many places sculpturesque, and may be, I think, realistically treated, though in modelling him one need not imitate the textures of his dress and their contrasts; these essentially belong to the painter's art. They do not consist of form that we can call tangible, so are not for the sculptor. Often from the ease with which an effect can be obtained by the direct, though imperfect, imitation of textures as a means of giving contrast, an inexperienced student will employ this means to the neglect of the proper form, of which the textures are the mere surface. Texture is closely allied to colour, about the use of which in sculpture I now wish to say a word, since that is another element in the imitation of nature.

Polychromatic or many-coloured sculpture, seems to have been used in every age; and at first thought it, perhaps, appears to us as if colour might be a means to accomplish the end of adding another charm to beauty of form, and so make sculpture more than a partial representation of nature. It, moreover, has the argument in its favour of having been used by the Greeks at the best period of their art. But we must bear in mind in what positions it was used, and for what purpose.

It was used decoratively in the frieze of the Parthenon at a height of 40 ft. above the spectator, at which elevation it was probably necessary to accentuate the flow of the design, and at the same time to harmonise with the highly-coloured building. This frieze, as you well know, was a continuous mural decoration running round the entire inner wall or cella of the temple, and for the figures to have had sufficient effect at that height without colour, would have necessitated making the projection and depth of relief so great as to destroy the apparent structure of the wall which carries the superimposed roof. The ceremonies connected with the polytheistic worship of the Greeks were sumptuous and brilliant, and, as in the Roman Catholic churches of the present day, the greater number of the statues immediately near the shrine or altar were coloured, in order to bring before the mind of the worshipper the presence of the deity, more distinctly than by the abstract and partial representation given by a colourless statue.

I have said that the sculptor ceases to imitate nature closely when the material does not admit of it, so that we get conventions due to material used in representation.

A convention which is admirable in one material would not, perhaps, be so in another. For instance, a support in the form of a stump of a tree or some accessory (although the subject might not require it) might be necessary in a marble statue to give sufficient strength, but would not be at all required in a bronze one. Also for the sake of compactness and consequent strength, the limbs in a marble statue should not be extended so as to become weak and unsupported; but in bronze there is no occasion for this restriction. So that bronze can be more extravagant, more elaborate,—can be built up piece by piece, can undertake a greater variety of subject, be more picturesque, more dramatic, more realistic than marble,—but since its dark colour does not admit of the delicate gradations and harmonies of form being perfectly seen, it will ever be less of the sculptor's material for the most beautiful and, therefore, the highest class of subject than statuary marble.

There is something about a block of marble that fascinates and almost invites a man to become a sculptor. Our first attempts with the hammer and chisel, however, prove that it is a serious matter to become even skilful in handling these tools.

This is, nevertheless, a training of the hand which every sculptor student ought, I think, to undergo. It is, I believe, a fact that a great number of those students who have taken the highest honours in sculpture in these schools have been good carvers of marble. It does not follow that every good carver will be a good designer, but he will be a better designer if he can carve and his work will be more workmanlike and solid.

Whilst on the question of materials, perhaps I may say a word or two about terra cotta. We have examples annually produced in which the dictum of Sir Joshua, whence we started, seems to be reversed, and "imitation is made the end of art." It is the facility with which much realism can be given in this material, and the consequent ease with which a meretricious effect can be obtained in it, which tempts many who are somewhat inexperienced in art to model in terra-cotta. The shrinking of the clay of about one-tenth of the linear measurement during firing in the furnace, and the chance of contortion and breakage, make this material unfavourable for employment. Although its field is wide, and beauty can sometimes be expressed in it, yet it is only really successful in portraying strongly-marked character, which does not lose by the somewhat unattractive surface of the dry, burnt clay. There have, however, been, both lately and during the Renaissance, extremely fine portrait busts made in terra-cotta; a great number of these latter are found to have a somewhat smoother surface than the modern ones. This smoothness depends considerably on the character of the clay and the amount of firing to which it is submitted, and although the effect is not so crisp and sharp as that of our modern examples, yet it is well to remember that a smooth surface is durable, and can be cleaned, whereas I fear many of the modern works of art in this material require a glass shade over them to preserve their charm. But I think we have come to dislike glass shades, and to prefer that sculptures large and small should be permanent and not fragile. In small pieces of sculpture there is a great pleasure in being able to take the work into one's hand and examine it at will; this, of course, necessitates a durable material and a fairly smooth surface. Small bronzes have a great advantage in this respect, and happily the more a bronze is handled the more pleasant is it to look at, unless it is an antique, and has a corroded surface,—that is, unless the bronze is changed into an oxide of copper, and so is beautiful in its delicacy of colour. This lovely green is, of course, the beauty of decay. How far it is advisable to reproduce this effect in modern bronzes is a question; to do so is, perhaps, rather like a painter attempting to make old masters. The surface of bronze should be beautiful, but it should be made so by its form, and not by its colour.

I can imagine our modern houses containing with advantage a far greater number of small sculptures than they do at present.

The walls of most houses are covered with modern pictorial art in some form or other, but our rooms are devoid of sculpture, our mantel-shelves and pieces of furniture are not decorated with it. Blue plates balanced on their edge in constant peril of their homogeneous existence occupy these sites. It should be one of the duties of the sculptor to try and displace these blue plates, and put small bronzes in their stead: he has only to make really good small statues and he will do it, or, at any rate, he will get his small statues standing in front of the blue plates, which will serve as a good background for them.

You will find that wax is the best material in which to model small sketches and statuettes. It is sufficiently rigid to require but little support, yet plastic enough to be fashioned into any form that the sculptor's mind can conceive, and is capable of being finished in point of surface to the minutest detail. It can be moulded and cast in bronze, while the original model remains. This is not the case with clay, which must usually be destroyed during moulding.

Before concluding, let us once more consider what is the right procedure for a sculptor to pursue, should he attempt to make a statue possessing beauty and grace.

It is to be hoped that he has an idea or faint vision in his mind of what he is going to do before beginning his sketch. But let us suppose his sketch made and carried sufficiently far to indicate the idea and composition of the work. The frame or skeleton for the clay figure is set up, and the model arrives and tries to take the position of the sketch at the direction of the sculptor.

The model, though perhaps excellent in proportion, and good in detail of form, fails to embody what the sculptor has imagined, and, moreover, cannot perhaps assume the action suggested in the sketch. This is often a sad moment for the sculptor, for if he has not conceived his design truthfully, he suddenly becomes aware of the fact.

Now, what is he to do? Is he, in making his statue, to cast away his idea and sketch, and imitate the form of the model before him to the uttermost of his power? Or is he merely to enlarge his sketch to the size of his statue, and refer only to the model to correct serious errors of proportion?

The first method would lead to nothing but what a perfect cast from nature would give us, and would be at best only a study. The second would result in a work essentially conventional and mannered, constructed on knowledge previously acquired, probably from the antique, and would not possess enough nature in it to excite human interest.

We see examples in sculpture of both these methods, but our true course lies between their extremes.

When you have conceived an idea for a statue, and have fixed your idea in a sketch, then have nature before you as much as your purse will afford, and should you find that your sketch is essentially untrue and structurally impossible, let it give way to what nature dictates; you will gradually perceive that your idea can be expressed by an action that is possible to the model. Do not confine yourself to one model alone; for your object, in this case, is not to make a portrait, but let every form possess the impression of having been worked out from nature, and let your good taste be shown by the selection of the forms employed.

And, lastly, as regards the subject which you should choose, I will only say a word. Let it be worthy of representation, and not merely dependent on a passing fashion or conceived to satisfy the vulgar love of novelty. As sculptors and co-workers with the men who made those inspiring statues twenty-three centuries ago, set your faces against anything that may tend to make your art other than what would be an ennobling influence to your fellow-men.

Illustrations.

We shall be glad to receive any drawings intended for the Royal Academy Exhibition, which their authors may wish to see illustrated in our pages, to be photo-lithographed before sending in to the Academy, and published (as far as possible) during the time the Exhibition is open. Where desired, we will make ourselves responsible for the delivery of such drawings at the Academy on the proper day, but cannot undertake to see to the return of them after the close of the Exhibition.

Drawings can be accepted, either in line for ordinary photo-lithography, or in colours for reproduction by other processes. It may be as well to observe, in regard to the question of time, that the processes for reproducing from coloured drawings require rather longer time than photo-lithography from line-drawings demands.

The receiving days at the Academy are March 27th, 28th, and 30th, for paintings and drawings, and March 31st for sculpture.

MERSEY TUNNEL RAILWAY STATIONS.

The line for which the Mersey Railway Company has Parliamentary powers commences by a junction with the London and North-Western and Great Western joint lines at Tranmere, Birkenhead, and after passing under the river Mersey extends to the Central Station in Liverpool, the whole length of the line being about three miles. The length of the tunnel is 1755 lineal yards, measured between the shafts, of which about 1,250 yards are actually below the river bed.

We have previously given some account of the work when in course of operation.*

The engineers are making special provision to insure a thoroughly satisfactory system of ventilation, and no expense nor forethought is being spared towards attaining this very important end.

The railway, when constructed, will accommodate the large traffic at present existing between Liverpool and Birkenhead, and, in addition to this, will bring the Great Western and North Western trains, which at present stop at the Birkenhead terminus, into the heart of Liverpool, and will also convey the traffic of the Great Northern, the Midland, and the Manchester, Sheffield, and Lincolnshire Railways directly into Birkenhead.

The Company have under view the necessity that will exist for important extensions, and are this year applying to Parliament for junctions with the lines of the Mersey Docks and Harbour Board on each side of the river, thus forming direct communication for goods traffic between the Docks of Liverpool and Birkenhead.

It is satisfactory to know that the cost of this railway per mile will not exceed one half that of the Metropolitan Railway in London, although the traffic will probably be quite as large and important.

The engineers are represented on the works by Mr. A. H. Irvine, the resident engineer, Messrs. Waddell, the contractors, being represented by Mr. James Prentice, their agent, and Mr. D. A. Davidson, their engineer.

The station buildings are being carried out from the designs and under the superintendence of Mr. G. E. Grayson, of Liverpool.

We give illustrations of two of them, viz.: James Street, Liverpool, and Hamilton-street, Birkenhead.

The level of the rails in James-street is 92 ft. below the street level, and in Hamilton-street 103 ft. 6 in.

In addition to the stone staircases there will be three passenger hoists, each accommodating eighty persons.

These hoists descend to the lower booking halls, which are level with the foot-bridges crossing the main lines.

The James-street elevation is to be faced with white stone, and that of the Birkenhead station with red terra-cotta.

The stations internally including the booking halls will have the walls lined with glazed bricks.

The height and size of the towers have been regulated by the levels of the tanks required by Messrs. Easton & Anderson in connexion with their hydraulic machinery.

The upper floors of the James-street building are arranged for suites of offices, with a separate entrance, staircases, and passenger-lift.

TWO SEMI-DETACHED RESIDENCES, DRUMMOND-STREET, MONTREAL, CANADA.

These have been completed for Messrs. H. C. Scott and H. G. Strathy, during the past year, and are built of Montreal limestone, lined with brick.

The houses, although harmonising in character and grouping, differ in plan, as well as in elevation, thus giving an individuality to each.

The style adopted is an adaptation of that in vogue in France during the time of Francis I., but owing to the severe winters of Canada, heavy snowfall has to be considered, and a frequent descent of the mercury below zero, necessitating the preparation for, and providing of double windows, and other contrivances for equalising the temperature indoors, so that some modifications would have to be made in almost any European style which might be adopted.

These houses are heated throughout with hot water, and the principal rooms and staircases are finished in hard woods. Most of the painted and ornamental glass came from the studio and works of Messrs. Guthrie, Sauchiehall-street, Glasgow, and the grates, &c., were supplied by Messrs. Steel & Garland, and the Coalbrookdale Company, of London.

The cost of each house, exclusive of stabling, &c., was a little over 3,000*l.* sterling.

The architects are Messrs. Taylor & Gordon, of London and Montreal.

"ART AND WORK."

Under this title, Mr. Owen W. Davis is bringing out shortly a remarkably interesting collection of drawings of decorative work of various styles and periods. From the plates for this work we reproduce two, concerning which Mr. Davis sends the following remarks:

Italian Fountains, Vases, &c.

"These designs are taken from the celebrated 'Hypnerotomachia Poliphili,'—a rare and costly Italian work, by Francis Colonna, a Dominican monk. The book was published at Venice in 1499, and was probably printed by Aldus. Although the written matter, which consists of a supposed contest between imagination and love, is a hotchpot of fact, fable, and antique lore, intermingled with amorous rhapsodies, the woodcuts with which the work is profusely illustrated are the best, in the simple style of line-drawing, that Italy has ever produced.

No. 1 is a frieze of amorini, dolphins, vases, &c., gracefully arranged with foliage; No. 2, a terminal vase; Nos. 3 and 6 are fountains; No. 4 is a lamp-stand; and Nos. 5 and 7 are ornamental vases.

The 'Poliphili' designs, which are evidently of the old Padua-Venetian School, have been attributed to Raffaelle and Alessandro Botticelli, as well as Andrea Mantegna, but the British Museum catalogue ascribes the drawings to Bernini.*

Animals, Plants, &c., from Fifteenth-century Woodcuts.

These clever engravings, so full of *motif* in design, as well as spirited in execution, are obtained by the simplest means which an artist could employ. They are taken principally from the 'Ortus Sanitatis,' printed at Mentz in 1491, which is a work on Natural History, by Jacobus Meydenbach. No. 1, a Water-plant; No. 2, Forbidden Fruit and Serpent; No. 3, Figs; No. 4, Dwarf Mallow; No. 5, a Water Subject; No. 6, Swans; No. 9, the Plant Mugwort (*Botris*); and Nos. 7 and 8 an Eagle and a Fish reproduced from the 'Herbal,' by Matthioli, a work of later date.

We would call attention to the 'colour thrown into the examples Nos. 1, 2, 4, and 9,—the engraver having artistically cut the internal foliage in *intaglio*.

It is noteworthy that the two plates here published are dated respectively 'Mentz, 1491,' and 'Venice, 1499,'—eight years' difference, and places not 400 miles apart.

Both illustrations are executed up to the full earnest power of the artists employed in the two separate countries."

SKETCHES FOR THE PUGIN TRAVELLING STUDENTSHIP.

The sketches of the south porch at Gloucester Cathedral and St. Margaret's Tower, Leicester (not St. "Mary's," as it was unfortunately printed off on the plan before the mistake was discovered), are reproduced from pencil sketches by Mr. W. H. Bidlake, who has gained the Pugin Travelling Studentship at the Institute this year with a very excellent collection of drawings, from among which these are selected. In regard to the tower, Mr. Bidlake writes,—

"In Mediæval times those in the diocese of Lincoln who enjoyed the luxury of a fire were subject to a tax of one farthing, known as 'smoke farthing' or 'Lincoln farthing.' The sum realised by this means was usually devoted to the maintenance and repair of the fabric of the cathedral, but sometimes that portion which was collected from the inhabitants of a locality was, by special injunction of the bishop, diverted to defray the expense of any building of an ecclesiastical nature that was in progress in the neighbourhood. St. Margaret's, Leicester (then in the diocese of Lincoln), was thus privileged, and its tower has been built by 'smoke farthings,' the injunction of the bishop being still extant."

ARCHITECTURAL SOCIETIES.

Leeds and Yorkshire Architectural Society.—At the meeting of this society, on Monday evening last, a paper on "Architectural Competitions" was read by Mr. Cole A. Adams, President of the London Architectural Association.

York Architectural Association.—At the meeting of this Association, on the 19th inst., Mr. W. H. Thorp, of Leeds, read a paper on "Colour Decoration." Mr. Pollard, the President, occupied the chair.

Edinburgh Architectural Association.—The usual fortnightly meeting of the association was held in the Professional Hall, on Monday evening. The President, Mr. G. Washington Browne, was in the chair, and, after some preliminary business, introduced the lecturer, Mr. J. C. Watt, who took for his subject "The Poetic Aspects of Architecture." The lecture was concluded by a reference to the characteristics and emotions common to poetry and architecture, particularly sublimity, symbolism, and association.

Glasgow Architectural Association.—The last lecture of the session was by Mr. William Paton Buchan, his subject being "Internal Plumber-work." There was a good attendance, and the vice-president occupied the chair. Plumber-work, Mr. Buchan said, was much less generally understood than the kindred subjects of drains. Still education was spreading, and slowly but surely ousting rule of thumb. The long-wished-for sanitary regulations now proposed by the Corporation were, almost without exception, commended. These, if decided upon, would place Glasgow among the foremost of cities in this respect.

Dundee Institute of Architecture.—Prof. Carnelley delivered an interesting lecture before the members of this Institute on the 18th inst. His subject was "Some Chemical Facts Connected with Plumber-work in Dwelling-houses." The lecture was chiefly devoted to a discussion of the corrosive action of various kinds of water on lead, copper, and zinc.

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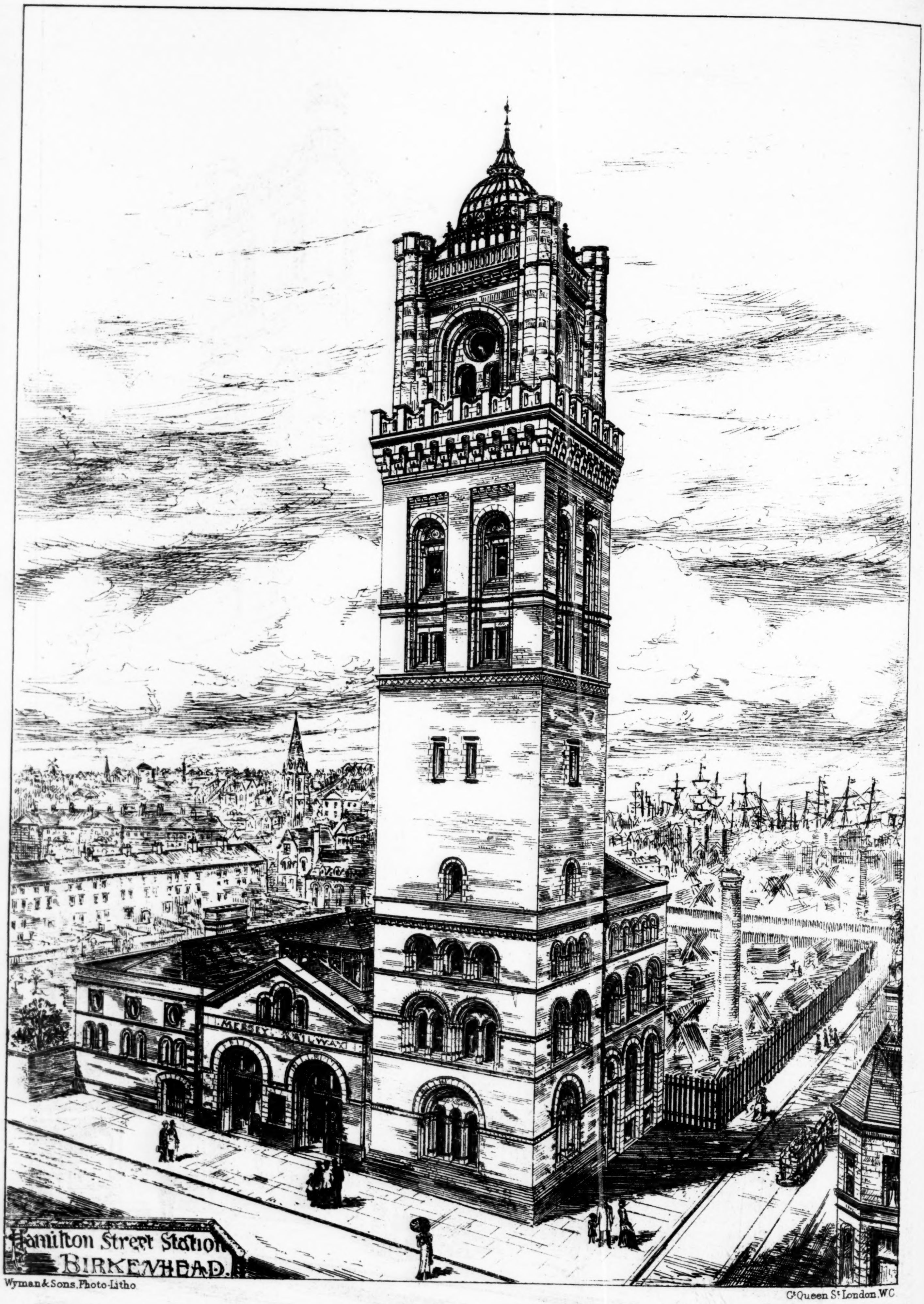
* *Builder*, March 15, 1884.

* We may say with Byron:—"Powers eternal! such names mingled!"—Ed.

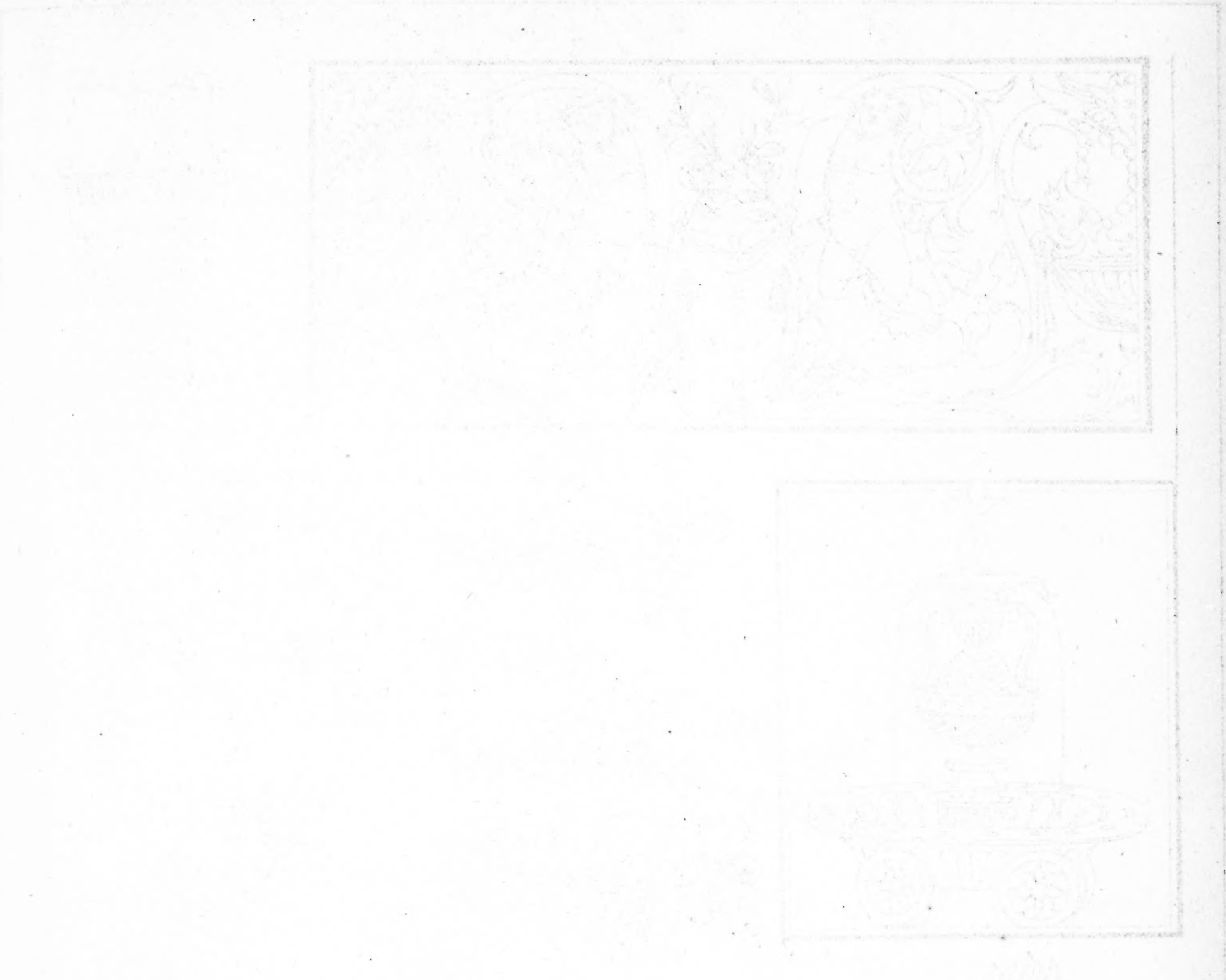

MERSEY RAILWAY
Hamilton Street Station
BIRKENHEAD.

Wyman & Sons. Photo-Litho

Gt Queen St London. W.C

MERSEY TUNNEL RAILWAY STATION, BIRKENHEAD.

Mr. G. E. Grayson, Architect.



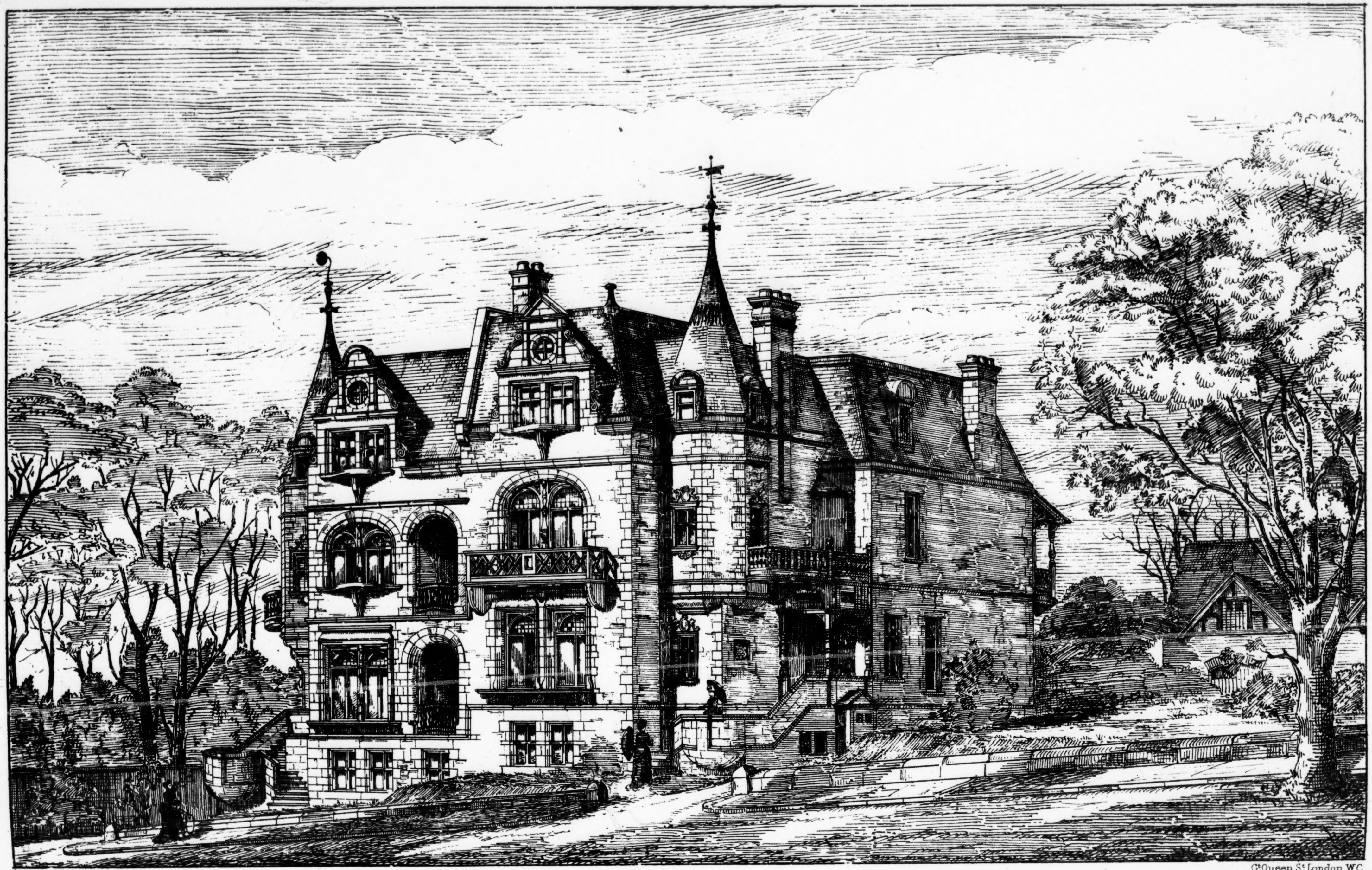
[illegible] W. Davis, del.

Wyman & Sons, Printers, [illegible]

ITALIAN FOUNTAINS, VASES, ETC.

From the "Hypnerotomachia."

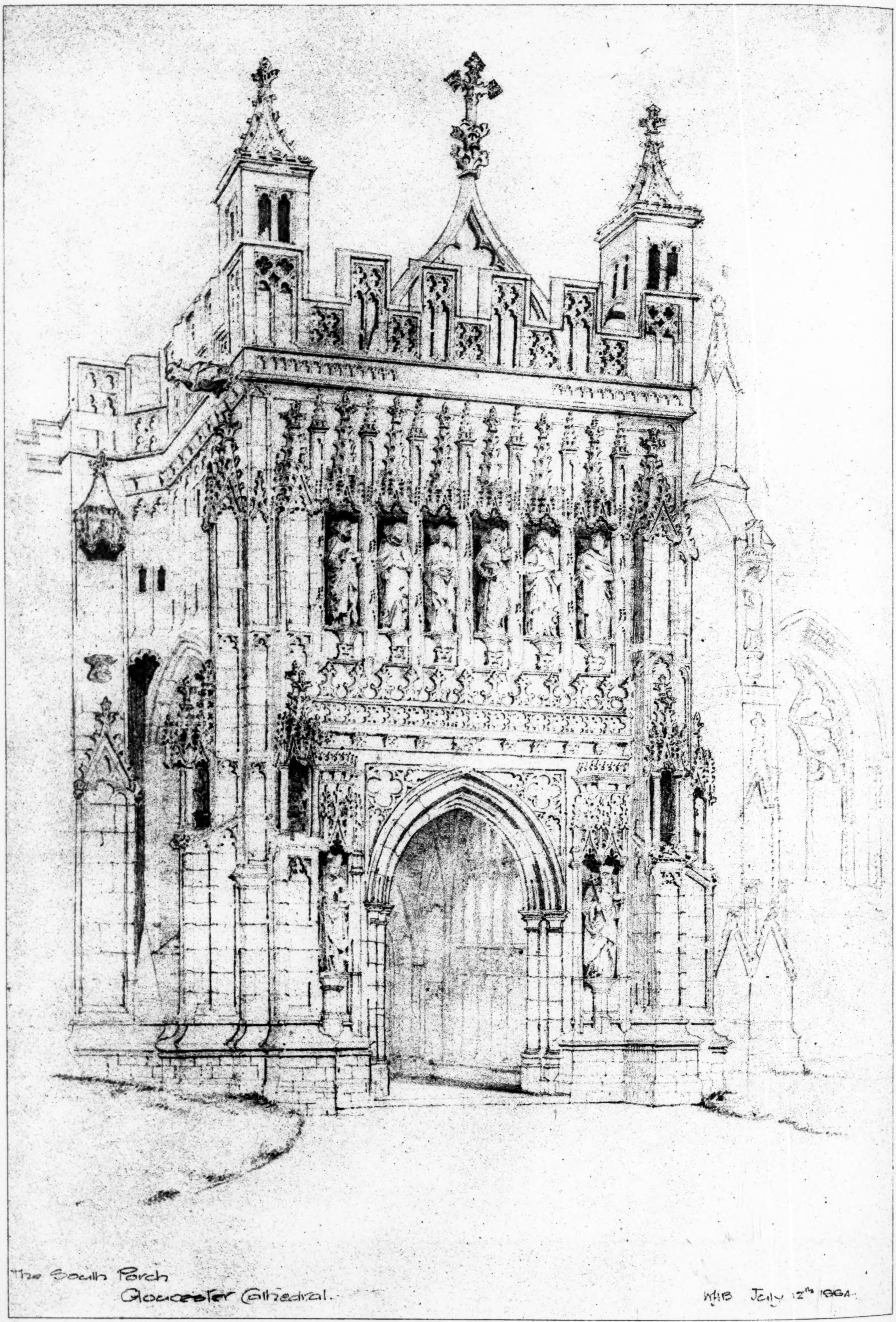
64



Wyman & Sons, Photo-Litho.

Gt Queen St London, W.C.

SEMI-DETACHED RESIDENCES, MONTREAL, CANADA.——MESSRS. TAYLOR & GORDON, ARCHITECTS.

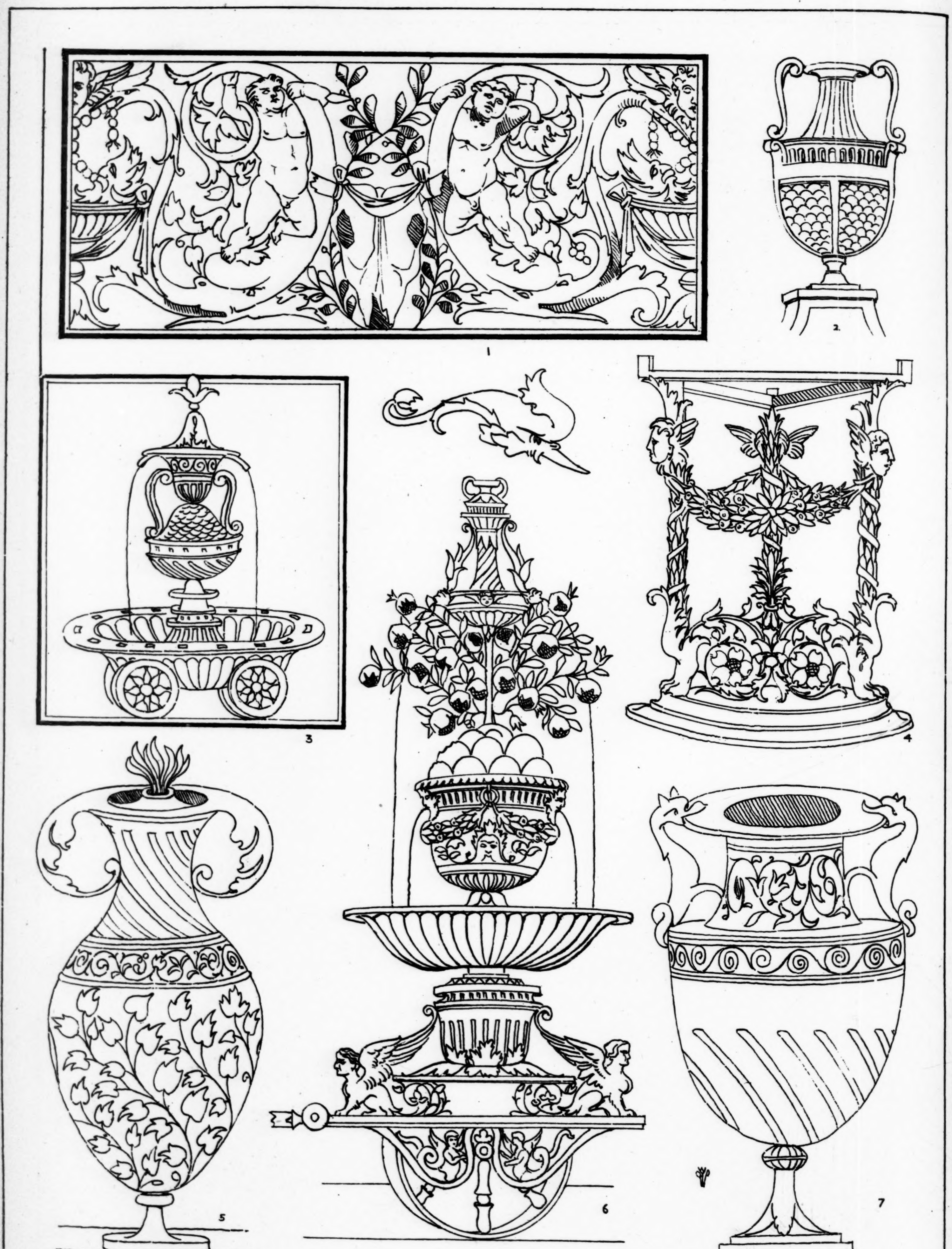

The South Porch
Gloucester Cathedral.
W.H.B July 12th 1884.

"INK-PHOTO", SPRAGUE & Co LONDON.

SOUTH PORCH, GLOUCESTER CATHEDRAL.

SKETCH BY MR. W. H. BIDLAKE.

Pugin Travelling Studentship, 1885.

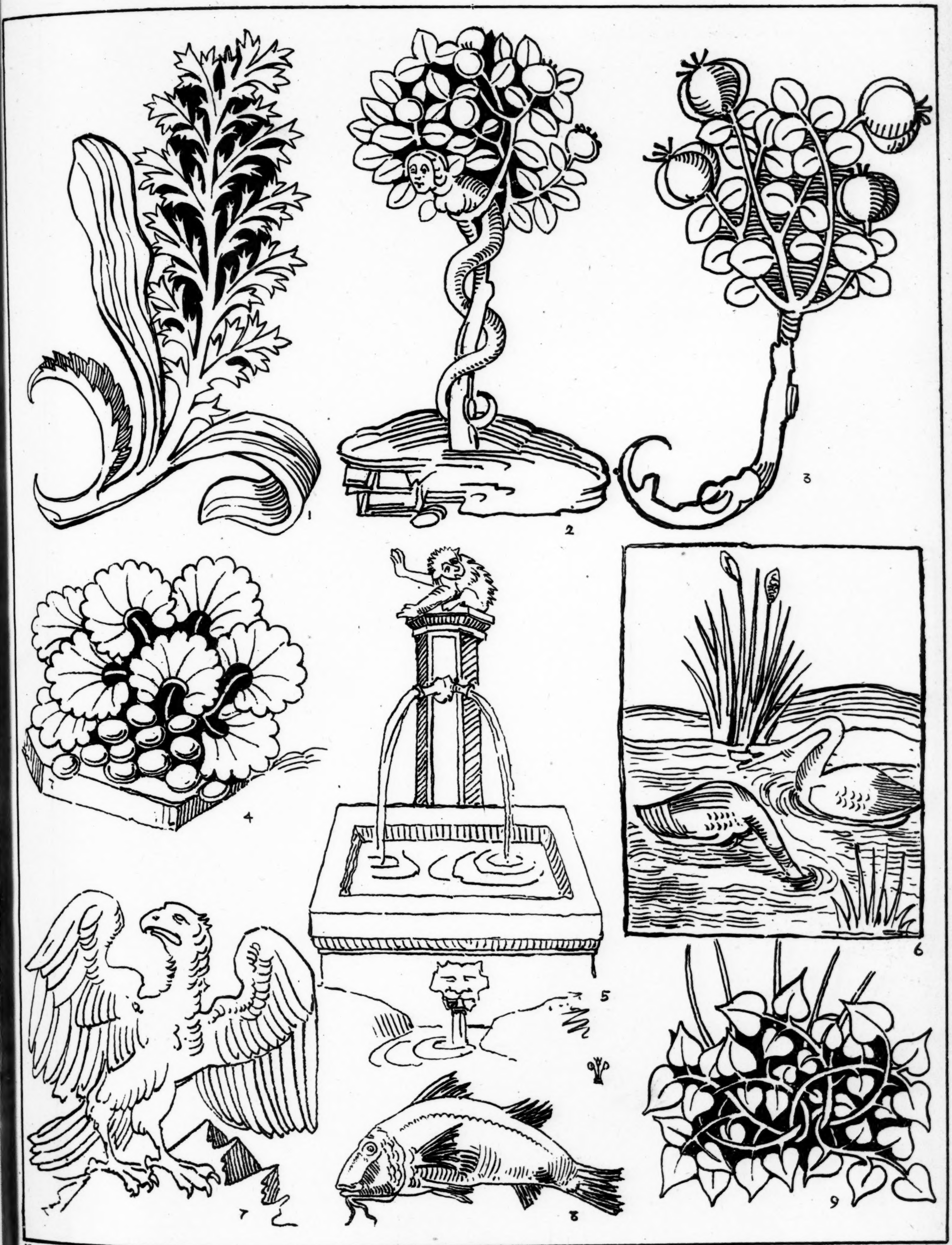


Wyman & Sons, Printers, Gt Queen St.

Owen W. Davis, del.

ITALIAN FOUNTAINS, VASES, ETC.

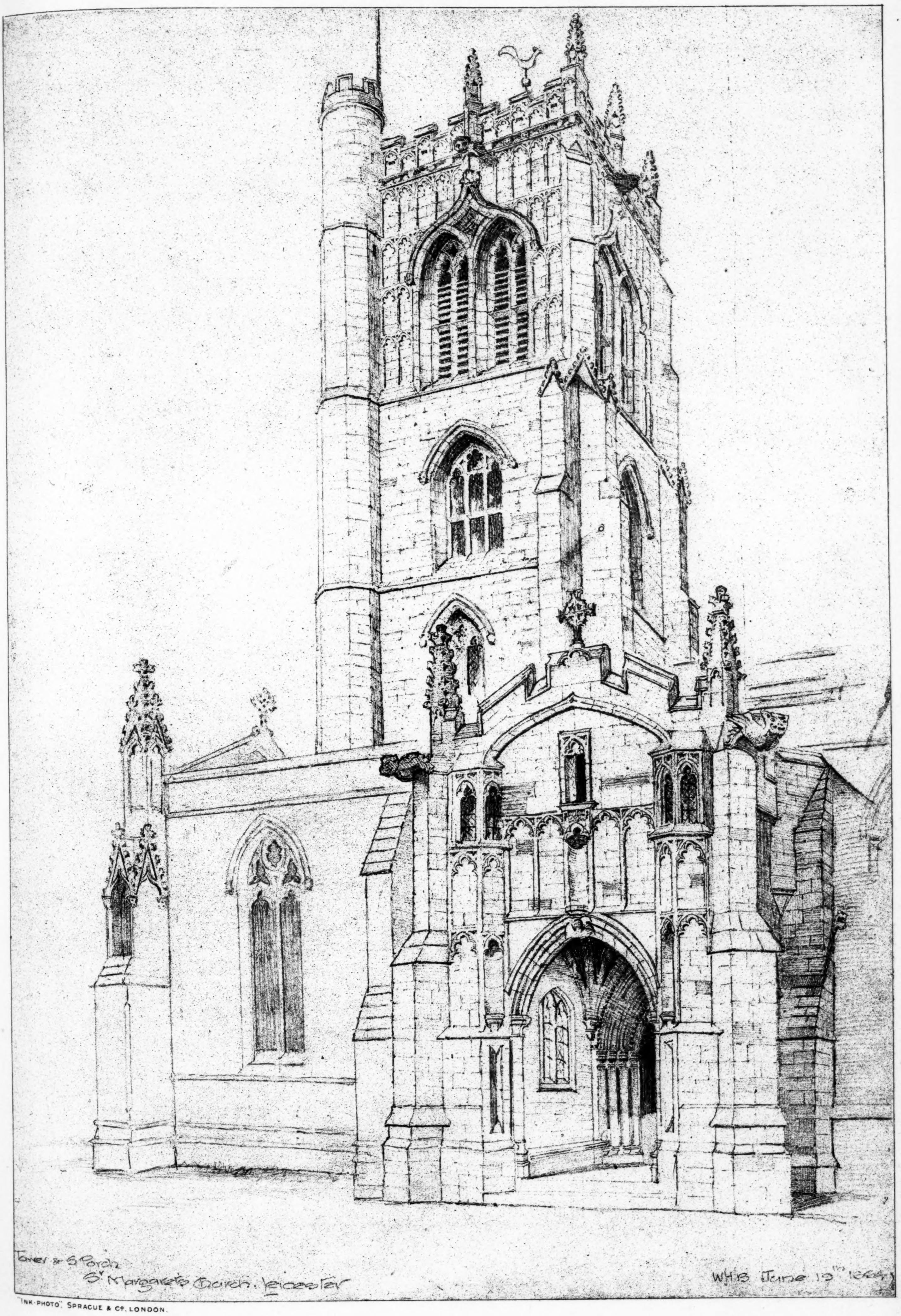
From the "Hypteronomachia."



Wyman & Sons, Printers, Gt Queen St.

Owen W. Davis, del.

ANIMALS, PLANTS, ETC., FIFTEENTH-CENTURY WOODCUTS.

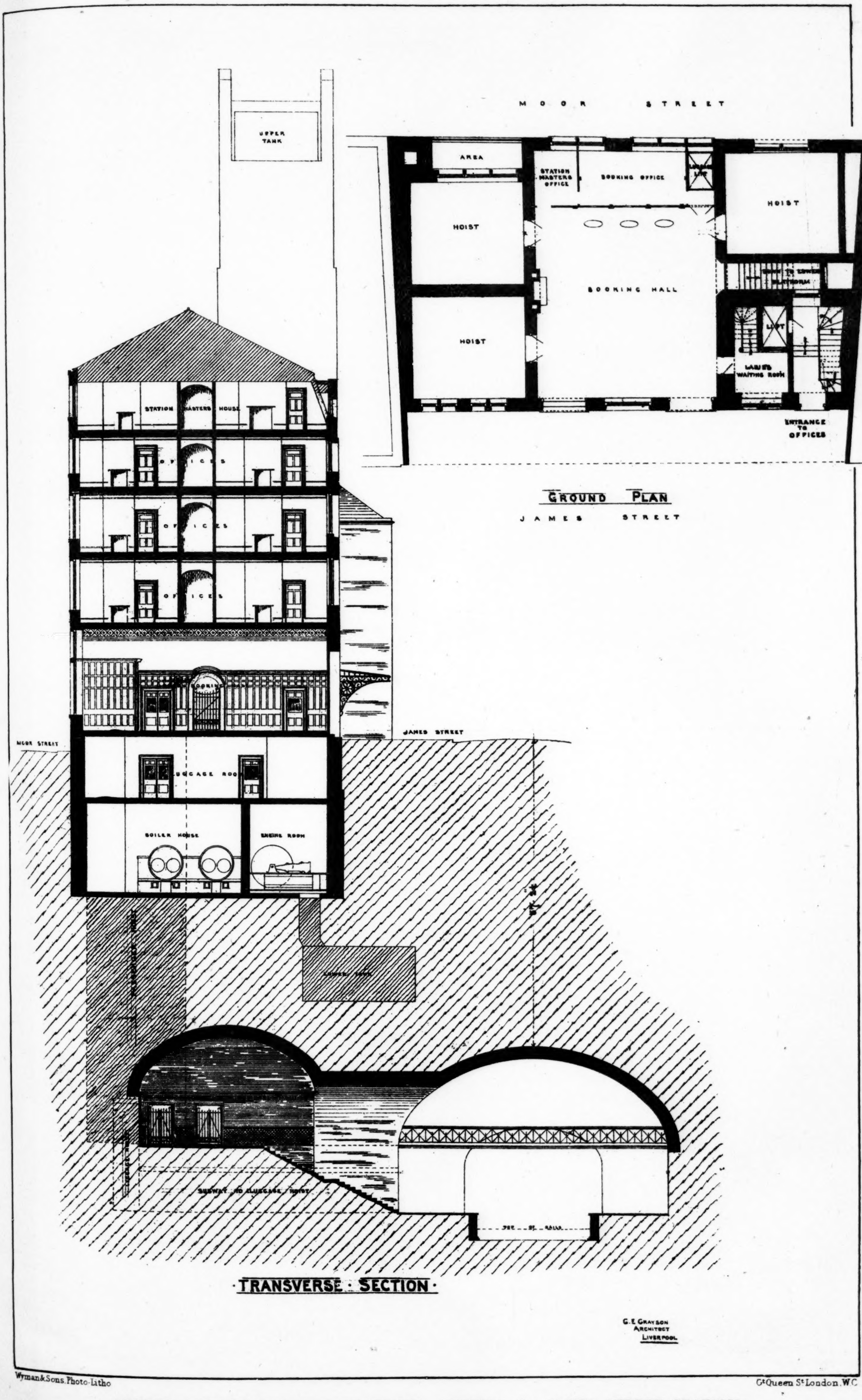

Tower & S Porch
St Margaret's Church. Leicester
W.H.B June 19th 1884

"INK-PHOTO". SPRAGUE & Co. LONDON.

TOWER AND PORCH, ST. MARY'S, LEICESTER.

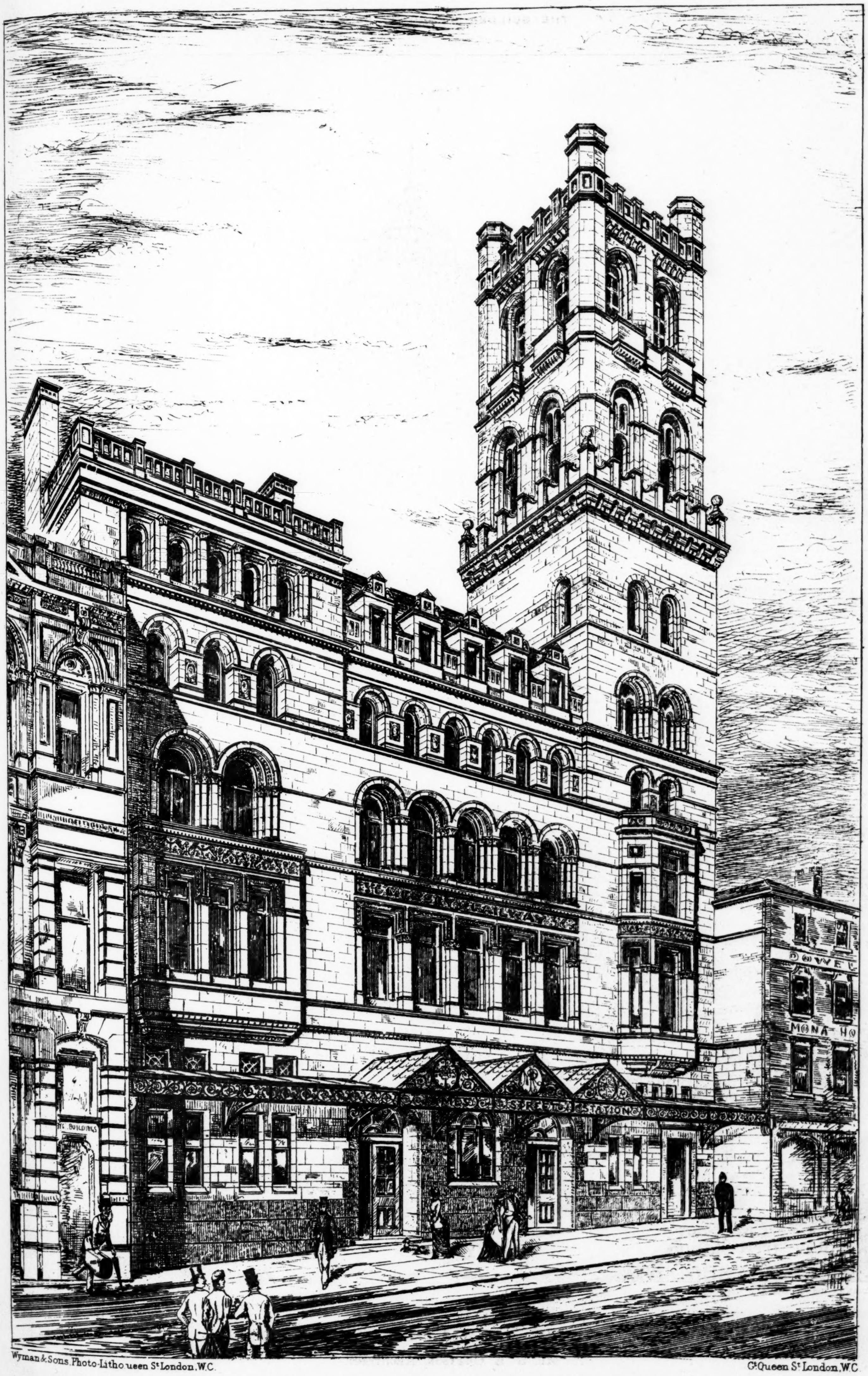
SKETCH BY MR. W. H. BIDLAKE.

Pugin Travelling Studentship, 1885.


MOOR STREET
UPPER TANK
AREA
STATION MASTERS OFFICE
BOOKING OFFICE
LUGGAGE LIFT
HOIST
HOIST
HOIST
BOOKING HALL
STAIRS TO LOWER PLATFORM
LIFT
LADIES WAITING ROOM
ENTRANCE TO OFFICES
GROUND PLAN
JAMES STREET
STATION MASTERS HOUSE
OFFICES
OFFICES
OFFICES
BOOKING
MOOR STREET
JAMES STREET
LUGGAGE ROOM
BOILER HOUSE
ENGINE ROOM
LOWER TANK
SUBWAY TO LUGGAGE HOIST
TRANSVERSE · SECTION
G. E. GRAYSON
ARCHITECT
LIVERPOOL

Wyman & Sons. Photo-Litho
Gt Queen St London. W.C.

MERSEY TUNNEL RAILWAY STATIONS: SECTION OF JAMES STREET STATION.
Mr. G. E. Grayson, Architect.


MERSEY RAILWAY
JAMES STREET STATION
BUILDINGS
POWEL
MONA HO

Wyman & Sons Photo-Litho ueen St London, W.C. C! Queen St London, WC

MERSEY TUNNEL RAILWAY STATION, JAMES STREET, LIVERPOOL.

MR. G. E. GRAYSON, ARCHITECT.

ROMAN RENAISSANCE.*

I BEG to introduce to your notice some account of the ecclesiastical architecture of Rome during the sixteenth, seventeenth, and eighteenth centuries. My reason for choosing such a subject is that it was suggested by the competition for the new Oratory Church at Brompton, which took place in the year 1878; and in the particulars furnished for the guidance of the competitors the first clause was to the effect that the style should be "Italian Renaissance." In response to this invitation a number of gentlemen (about forty) furnished designs of unusual merit, but, on careful examination of the drawings during the time they were exhibited to the public, the impression conveyed to me was that the words "Italian Renaissance" were not quite grasped by some of the competitors, whose designs were in the style of the old basilicas, while others savoured of the Byzantine and Romanesque character. I thought, therefore, that as Rome is considerably removed from the city of London, and that to visit it means a sacrifice of a deal of time to the younger members of this Association, an account of some of the principal churches erected in that city during the before-mentioned periods would not be uninteresting. You are already fully aware that Gothic architecture never took root in this most interesting city of the world, for during the period of Pagan Rome such a style was never dreamed of; and, secondly, on the Romans being converted to Christianity, they found their ancient temples and basilicas very convenient and suitable for the functions of the newly-embraced faith, and so they continued to use them, restoring or rebuilding such portions as was demanded by the destroying hand of time, until the rebuilding of St. Peter's, about the year A.D. 1500, when our Perpendicular architecture reached the zenith of its glory. This circumstance was an event of considerable moment in the history of the revival of Classic architecture in Italy. Artists and sculptors (for I believe architecture was not practised at this time as a distinct profession) were called in from every direction, in some cases to patch up, and in others to pull down, the existing churches, and to furnish new designs after the model of the great cathedral, but on a very diminutive scale; that is to say, every church should, if means permitted, be crowned with a cupola; while in the other cases the dimensions and historical interests connected with such buildings as S. Paolo fuori le Mura (St. Paul outside the Walls), St. Giovanni in Laterano (St. John Lateran), S. Maria Maggiore (St. Mary Major), made the question of rebuilding too serious to be entertained, but they were, nevertheless, subjected to such additions and alterations after the new style that in some cases all traces of the original structure had fled. Take, for instance, S. Giovanni. This basilica was founded by Constantine at the instigation of St. Silvester in the fourth century, who is said to have personally assisted in digging the foundations. The façade was designed by Allesandro Gallilei in 1734, and the whole of the interior was metamorphosed by Borromini (who appears to have had the lion's share of architectural practice) in the same degree that Winchester Cathedral was under the direction of the talented Bishop, William of Wykeham. The dimensions of this church are very large, consisting of five aisles, originally divided by stone or marble columns, which in the middle of the seventeenth century showed signs of weakness, and Borromini was then consulted. In the emergency he suggested the idea of encasing the columns, and filling up every alternate arch with solid masonry, and facing the nave walls with pilasters of the composite order, reaching from the floor to within a short distance of the ceiling. These solid piers were adorned with large niches of a very debased style of art, and in which were placed statues of the Apostles, of colossal dimensions. This arrangement was finally carried out, and if we could only overlook the shortcomings in the detail I think we must confess that the architect displayed high ability in his manner of dealing with the awkward task placed before him. The great ornament of this church is the first chapel on the left-hand side, and known as the Corsini Chapel. It is square on plan, but has a large recess on each of the four sides, thus giving it the form of a Greek cross, the whole is surmounted by a cupola, and adorned with paintings and marble of the most precious description. It is really one of the treasures of Rome, and every architectural student who is privileged to visit that city should not forget to fix it indelibly on his mind as well worth seeing.

The next church of importance is that of S. Maria Maggiore, but as this basilica has experienced little or no alteration since the date it was founded, A.D. 352, I cannot dwell upon it here, except to allude to such portions as would fall under the title of this paper: consequently I beg to call your attention to the Chapel of the Blessed Sacrament, commonly called the Sixtine Chapel. It was erected from the designs and under the direction of Cavalier Fontana (one of the most gifted architects of his time), and in my estimation this work is not equalled by anything else in the city of Rome. Its plan is most beautifully conceived, and its interior elevation and decorative treatment is certainly equal in merit to the plan. It is one mass of marble, gold, and fresco, so beautifully and tastefully arranged that the eye of the most educated artist could not be offended at it. I have the good fortune to possess both a plan and a section of it, which are also displayed in De Rossi's collection of chapels. There can exist no doubt but that this gem is the acme of perfection in the Renaissance style of architecture, and what every architect at the period would have done if his ability and the means at his disposal permitted it. Its *vis-à-vis* is that known as the Borghèse. It is very similar in plan to the other, but not so rich in treatment. It is, nevertheless, an important adjunct to this ancient and magnificent church, where any young and enthusiastic disciple of architecture could take up his quarters for a couple of months and well occupy his time by carefully delineating the multitude of precious works of art, both plastic and polychromic, which present themselves at every nook and corner within its sacred walls. I would now be anxious to dwell on the merits of San Paolo fuori le Mura, and also on those of San Lorenzo, but the subject of this paper will not permit me: consequently I must pass them over in silence and give place to recent structures, which more particularly concern my subject.

The plan of the churches during the period of the three centuries mentioned at the commencement of this paper was governed in no small degree by the site upon which the church was to be built. If the ground would permit, it was a repetition on a small scale of St. Peter's; that is to say, the plan should be rectangular,—the nave and transepts forming the cross, and the intersection being crowned by a dome, with the aisles utilised as chapels; in fact, very similar to that of the Oratory Church. And if the site was very irregular (which frequently happened), and would not permit of a Latin-cross plan, it was made either circular or octagonal, with all the outlying corners utilised as sacristies and offices, which, in most cases, were ingeniously dealt with, only we must bear in mind that it must have a cupola.

These octagonal or circular churches are so numerous, and so worthy of being imitated, that I think it would furnish quite sufficient material for a separate paper. In our own country, when an idea is entertained of erecting a church, a piece of ground is purchased that would, if possible, admit of the fabric standing detached, with light and air, and perhaps a burial-ground, surrounding it, but this arrangement in Rome was seldom if ever indulged in at this period, a custom arising, no doubt, from the fact that the city was surrounded by a wall, which naturally in troublesome times increased the value of the land to such an extent as to render this luxury impossible; so that, as a rule, they were packed in between and backed up by a host of dwellings in such a manner as to deprive us of forming an idea of what the external architecture of these churches might have been, had circumstances permitted the architect the indulgence of an undisputed area (excepting the façades, to be alluded to hereafter). This misfortune may probably account for the conspicuous absence of side windows and the recourse to top lighting. If this assumption is correct, I must only repeat the old adage "That out of evil comes good," for we must all admit that the most satisfactory method of illuminating a large building is either by obtaining light from above or by some large opening over the entrance end. In the South of Europe this question is more easily disposed of than is possible in the City of London, in consequence of the brilliancy of the atmosphere with which the former is favoured. Our own St. Paul's to wit; for I do not hesitate to say that, did its cupola exist in Southern Italy, the cartoons which are now being exhibited to the public and placed *in situ*, intended as a suggestion for its future embellishment, would be fully seen and appreciated by the public, but which I fear (and I regret to say it as they are so beautiful) will be lost for ever in a region of darkness. The usual method of covering the churches of Rome is to give them a wagon-headed ceiling of concrete, penetrated by smaller jack-vaults, a necessity caused by the clearstory windows. Now this arrangement of covering the nave gives the architect a considerable amount of responsibility and also anxiety, in consequence of the immense lateral thrust exercised by the vault, for it must be remembered that the builders of this age had not the opportunity of using Portland cement, but were confined to the ordinary lime and pozzolana and thin brick in use at this date, about 1¼ in. to 1⅓ in. thick; with these materials it was necessary that the vaulting should be of great thickness so as to secure sufficient strength and stability. In one case, where I had the privilege of going up into the roof, it gave me an opportunity of making an examination of the material itself, and I found it composed of coarsely-made concrete, 2 ft. thick at the crown instead of 7 in., which I have ventured to risk at the Oratory Church. Notwithstanding this great thickness of material there was a rent running the whole length of the nave, threatening the utter destruction of the building, and to prevent such a catastrophe the springing of the vault was secured by wrought-iron ties, 3 in. square on section.

Having described the principles which actuated the architects of this age, I think I may now allude to and describe some of the churches erected by them, which I would consider as typical of the style of the period, and which could be more or less imitated with advantage in this country, only I must caution you to beware of the so-called ornament of the later period, for if you study that you will be sure to fall, as it is impossible for any one to imagine a more grotesque and monstrous medley than is exhibited scattered broadcast over some of these buildings and altars, utterly disfiguring and destroying what might have been, in the case of its absence, a very fair specimen of architecture. This disease arises from the thirst for light and shade, anything that would break the tranquillity of architectural lines; in fact, it may be summed up as a sculptor's notion of architecture, such as I have frequently seen in many cemeteries, designed and executed by "monumental masons."* The refinement acquired by Greece was entirely ignored, and the glorious examples with which they were themselves surrounded were passed by unheeded. Severity, grace, and delicacy were all sacrificed for this carved rubbish, no matter how indifferent it may be.

But notwithstanding these blemishes, the interiors of the churches of Rome have and will continue to excite an interest to the traveller which we certainly cannot boast of in the case of our few examples of Renaissance churches at home, because, in the first place, there is no admission to them except on Sundays, and, even if it were otherwise, there remains little or nothing to be seen. The first church I shall describe is that of St. Ignazio, designed by Padre Oratio Grassi, and commenced 1626; it is one of the most important in the city, and belongs to the order of Jesuits, having an internal length of 270 ft. with a nave 60 ft. wide and 100 ft. high. The proportions of this church I consider excellent, and the general arrangement is very simple, having the cross formed by the nave and transepts; in each aisle are three chapels, with two additional ones on each side of the sanctuary, all crowned with a small cupola. The pilasters in the nave are of the Corinthian order, fluted, and rest on the floor, *not* on pedestals; this arrangement answers exceedingly well in a church where fixed benches and pews are practically unknown, but in London I consider that I did not err when I adopted the plan of raising them about 5 ft. or 6 ft. The nave, or what are sometimes called the clearstory arches, those which lead into the chapels, spring from detached columns, and, if I remember correctly, there are only two solitary instances of this arrangement among this vast collection of temples. The usual custom is to make the arches spring from imposts, the same as we see at St. Paul's Cathedral, but the architect of St. Ignatius did not do as Sir Christopher did, and cut away his architrave to give room for the arch, but, on the contrary, which to me was nevertheless faulty, he kept them below the level of the necking of the capitals of the principal order. This, I think, is unfortunate, for if the arch was carried higher the key-stone could be so arranged as to apparently support the centre weight of the architrave. This church, though originally intended to be graced with a cupola, still remains without one, and, as a substitute, the area is covered with a vault of the section of a watch-glass, upon which is painted a perspective view of the interior of a dome, by Andrea Pozzo, a drawing of which I am proud to possess, and is portrayed in an old treatise on Perspective, which not only speaks of the ability of Padre Pozzo as a delineator of perspective, but would even award him a place in the ranks of architects; and lastly, the book displays the ability of the English engravers of the time of Queen Anne, by whom the plates were executed. On examination, I believe that every one here would confess that since that date no advance whatsoever has been made in the art of copper-plate engraving, and so much was it appreciated and considered a perfect work of art, that the book was dedicated to her Majesty Queen Anne, and endorsed by Sir C. Wren, J. Vanbrugh, and N. Hawksmoor. This design and perspective drawing of the cupola is not the only relic in this church of the talent of Pozzo, as the high altar and that in the left-hand transept, together with two others in the aisles, and also the decoration of the nave ceiling, are the fruits of his ability.

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* A paper by Mr. H. A. K. Gribble, read at the meeting of the Architectural Association on the 20th inst., as elsewhere mentioned.

* Possibly the sculptors will demur to being classed with "monumental masons."—ED.

Now before proceeding further I would like to call your attention to the Dome of St. Peter's, which is generally considered to be built on four arches, but in reality it is built on an irregular octagon, with the octagonal sides filled up solid; this arrangement, if the nave and aisles are sufficiently wide to allow a fair proportion to the arches, gives an appearance of great stability to the piers, and I have taken the liberty of calling this arrangement an *oltre* dome, as it exceeds the width of the nave and transept walls, which are its natural abutments. I regret that during my stay in Rome I did not ascertain the mode of construction of this portion of the first church in the world, but I looked for a repetition of it in that city and only discovered one instance of it, and that was in the Church of St. Antonio della Nazione de Portoghesi, in which case it exceeds the width of the nave by about one-third. In the case of our own St. Paul's, the cupola is carried on eight arches, the springing of which above the piers has an exceedingly weak appearance, and conveys the idea to the spectator that it is unequal to the task of supporting the superincumbent weight; but, on visiting this building lately, I found a number of workmen engaged in erecting a wooden framing of arched form, reducing the radius of the arches at the octagonal arches by about 8 ft. (I presume by way of experiment). If this is the case I have no doubt but that it will succeed in giving an impression of strength where it badly wants it. But are we at liberty to make such freedom with Wren's work? If so, we are equally at liberty to dispose of the question of its decoration by simply doing what others have done before us, remove the present Portland stone surface and replace it with precious marbles.

The next church which I consider it my duty to call your attention to is that of the Gesu, close to the Corso, and a little north of the Capitoline Hill. It is similar in plan to St. Ignazio, and was commenced in the year 1575, just 100 years before our own St. Paul's, from the designs of Vignola, but the façade and cupola (which circumstance I hope and trust will not be repeated in my case at the Oratory) were carried out by another architect, Giacomo della Porta. The length of this building is about 200 ft., the width of the nave about 50 ft., and the height about 90 ft. Taking the building as a whole, it is very satisfactory, both in proportion and in colour. The interior is very rich in marble, and richer still in scagliola. One of the principal objects of attraction in this church is the altar of St. Ignatius, designed by the before-mentioned Andrea Pozzo, an engraving of which, 200 years old, gives some idea of his work. It is chiefly of polished marbles of the rarest description, with a large central niche containing a statue of the saint in solid silver, and adorned at the top with a marble group emblematical of the Holy Trinity. On each side of the altar are large allegorical groups, also in marble, one representing the "Triumph of Religion over Heresy," and the other "Christianity embraced by Barbarous Nations." These works are by Messrs. Theodore & Le Gros, and remind me very much of the compositions of the late Mr. Alfred Stevens, which form one of the principal features of his design for the Wellington Monument at St. Paul's.

I now pass to St. Andrea della Valle, adjoining the relics of the Theatre of Pompey; it is really one of the best specimens of Roman churches. The designs were furnished by Olivieri in the year 1591, but finally carried out by Maderno, and the façade by somebody else, and to which I will hereafter refer. The plan of this church, together with its dimensions, are similar to those of the Brompton Oratory; it is a most attractive building, not only from its agreeable proportions, but also from the wealth of its decorative treatment, where the skill and ability of the most distinguished artists extant at the time was displayed. The fitting-up of the first chapel on the right was entrusted to Fontana, and that adjoining it to Michelangelo. The cupola is one of the most beautiful in Rome, and springs from a base similar to that of the Ignazio and the Gesu. The chapels adjoining the dome piers are contracted, an expedient no doubt to give strength to the piers supporting the cupola. I would now willingly pass on to describe the exteriors, but I fear this paper would not be complete if I omitted to refer to the Oratory at Rome, Sta. Maria in Vallicella, better known as the Chiesa Nuova.

Both the Church and the Order of Oratorians were founded in the year 1575, the same date as the Gesu, by S. Philip Neri, just one hundred years before the commencement of the building of St. Paul's Cathedral. The church measures 220 ft. long and 50 ft. broad, and is 98 ft. high, and is one of the most highly decorated churches in the city, the architect being one Martino Lunghi. The arrangement of the plan is somewhat different to that usually adopted by the clergy at this period, for instead of the customary three large chapels on each side of the nave, there are five comparatively small ones, the whole of which suffer from want of light, and the chapels having windows on each side of the altar give an air of insecurity, which effect is not experienced when the lighting is obtained from the ceiling or other lofty positions. The cupola of this church differs in form from that usually adopted in other churches, and is conspicuous by the absence of a drum, which form, singular to say, I proposed for the church at Brompton; but there is one point which I noticed in the dome piers of nearly every domical Roman church. It may seem too trivial to call for a remark, but at the same time trifles often contribute towards the success of a harmonious whole, and consequently I shall call your attention to it. The usual method adopted was to so plan the piers that they should possess the maximum of strength, and to do this, pilasters were made exceedingly shallow, and the four corners of the square filled up with masonry, giving an octagonal splay. I look upon this arrangement as a misfortune, æsthetically speaking, for if the pilaster project only 12 in. or 9 in., and the pendentives spring from plumb over the splayed angle, it allows for the visible arch supporting the cupola only the 12 in. or 9 in., which conveys a sense of weakness and looks exceedingly mean. In the case of the Roman Oratory the architect discovered this when he arrived at the cornice, and instead of making the pendentives to spring from the octagonal corner he commenced by starting from the inner angle, and so secured an arch of about 2 ft. 6 in. deep, and which was his only way out of the difficulty. This building, like the others previously described, is very rich in marble veneering, and also in frescoes; the whole of the floor of nave, aisle, and chapels is of polished marble, inlaid with floral patterns. Should any student of architecture visit Rome and call at this church, I feel that he would be very graciously received by the Rev. Fathers, who would be only too pleased to render every information required. The residence of the clergy, including the Little Oratory and Library, were, I understand, confiscated to the Crown after the seige of Rome, about fifteen years since, and used by the authorities as the Assize and other Law Courts. In fact, during my visit, the clergy, in whose possession the library had been for over 300 years, had to ring a bell and obtain permission for me to see this portion of the building, and on entering I found certain individuals, who were appointed by the Government, making an inventory of the books and other treasures, for the purpose, I was told, of forming a national collection. Whether the good Fathers of the Oratory received any remuneration from the Government for such a proceeding, or whether it was simply treated as the spoils of war, I cannot say. But this religious establishment was not the only one subjected to this kind of treatment, for if I am correct all the private apartments attached to the Gesu were utilised as a barrack for the soldiers.

I should not be doing justice to any one intending to visit Rome were I to omit calling their attention to the fact that there are other churches where good examples of the Renaissance period may be found, either in monuments or in chapels. Sta. Maria del Popolo, St. Pietro in Vancoli, the Ara Cœli, S. Prasside, S. Martino ai Monti, St. Francesca, the Apostoli, &c.

Now with reference to the exterior architecture, I mentioned in the earlier part of this paper that little or nothing is known beyond the façade, which in the case of S. Andrea della Valle, S. Carlo in Corso, the Ignazio, and the Gesu, are infinitely superior to indifferent samples of Gothic architecture thrust upon us during the last thirty years. Of course, in this sweeping remark there are exceptions, and the author of such will know perfectly well where to draw the line. Notwithstanding my curt visit to Rome, I noticed the conspicuous fewness of towers or campaniles, and still more so where two are indulged in at the west or entrance end, and those solitary examples are St. Agnese in the Piazza Navone and Trinita di Monti. Many years ago I saw a photograph of the former in Regent-street, and which gave me the inspiration for the design of the London Oratory, though I was accused by those who considered themselves critics to have pirated from the Church of St. Sulpice, Paris, and to have copied the tower of St. Botolph's, Bishopsgate-street, and to have derived other ideas elsewhere. I have the satisfaction of knowing that all this was error of judgment on the part of the censors, but even recently a criticism has appeared in the columns of the *Nineteenth Century*, from the pen of a very able writer, and one whose remarks from my youth I always appreciated and endeavoured to bear in mind. Even this authority made a slight mistake, but which is, nevertheless, very flattering, and as such I may be permitted to quote it:—

> "An experiment has already been made in the new church which the Oratorians have erected at Brompton, though not, it must be confessed, an entirely satisfactory one; but it was conducted under circumstances which were not likely to result in a successful issue. Mr. Gribble, the architect entrusted with the design, is a young man brought up in a different school, and who had never designed, much less erected, anything of its class. After he received the commission he was sent to Italy to examine the churches there, and learned his lesson as a schoolboy does; but it requires both thought and experience to assimilate the principles of an art before anything good can result from its practice, and this Mr. Gribble has not had. He has, nevertheless, produced a very fair specimen of its class,—spacious, convenient, and thoroughly well lighted,—and when the coloured decorations, which it is admirably well adapted to display, are carried out, it will, on the whole, be one of the most satisfactory of London churches. It will, when complete, cost about one-half that must be expended on Sir Tatton Sykes's German Cathedral, though the sizes of the two are not materially different, and the Oratory Church would probably accommodate a larger congregation and with more convenience than the Votiv Kirche."*

Now let us revert to another item still connected with this subject, and that is the dome of St. Peter's. To the ordinary multitude it is one of the wonders of the world, but I have been present among young architects who professed to see nothing in it, either from an artistic or constructive point of view. Now, this feeling, I think, must arise from prejudice and from not studying it sufficiently. I must confess that, viewing the cathedral from the west end, the cupola does not assimilate nor unite gracefully with the façade; but whose fault is that? Not Michelangelo's; for, were it left entirely to that genius we could never have laid that charge upon his shoulders, but new clients and new architects stepped in on the demise of the former, who are always anxious to show that they have a spirit and a view of their own, independent of their predecessors, and so much the worse for architectural harmony. You must remember that no fewer than thirty architects were engaged upon this church, and that Michelangelo had little or nothing to do with it beyond the designing of the cupola. The whole of the nave and west end were entrusted to the care of Carlo Maderno, who intended to grace the façade, after the manner suggested by San Gallo, with two campaniles, one on each side of the portico; and such were being carried out when it was found out that the soil was unequal to bearing the weight, and large fractures began to show themselves in the masonry. The work was consequently taken down to the level of the attic, and the foundations strengthened on the west side and south-west angle by means of piling. No doubt, if the church possessed the two towers originally destined for it there would be little reason to complain of the comparatively shorn appearance of its façade.

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* Mr. James Fergusson on "The proposed New Cathedral for Liverpool," in the *Nineteenth Century* for December, 1884.

The great difference existing between the churches of Italy and those, I may say, of other European countries, is the superb manner in which they are decorated, making the interior one blaze of colour, gold, and precious marbles, such as the eyes of Englishmen are totally unaccustomed to; whether their absence arises from want of funds in this country, or for lack of our taste for colour, I cannot say. Certainly I am acquainted with an architect who, when he heard of the possibility of his church being decorated, said that he hoped that he might never live to see the day. Of course, if such buildings are to be finally embellished with colour, I consider that it should not be left solely to the fancies or the caprices of the individual who styles himself a gilder and decorator (who, to my knowledge, has recently been permitted to thrust within the very walls of the sanctuary an exhibition of that most debased of all ornament the "Rococo"), but that the architect of the structure, if he is living, should be consulted, and his original ideas more or less carried out, in order that the polychromic *coup-de-grace* may not clash and destroy the architectural and constructive lines. I am only acquainted with one building in England that I could refer to as an example of what I should like to see more frequently imitated in this country, and that is the Mausoleum at Frogmore, the solitary richness of which, though beautiful, cannot vie with the numerous examples in the city of Rome or Genoa. It is a great misfortune that such a chapel should be so far removed from the City of London, and that it should be so difficult to obtain permission to visit it; for if the public had an opportunity of seeing such buildings more frequently, it could not fail to school the eye and to contribute largely towards their artistic taste, and make them less satisfield with common yellow bricks and whitewashed walls.

Now, in concluding my paper, I would like to allude to the fact that Rome is a city of cupolas in the same sense as London may be styled a city of campaniles and towers, the like of which exists nowhere else in the world, and which, I hope and trust, may be spared by the hand of man and from the ravages of time for many centuries to come. Rome can boast of the handsomest cupola ever erected, and we, at least, can feel proud of our St. Paul's Cathedral, the most beautiful composition of external Italian architecture in Christendom. Antwerp may claim the right of ownership to the *chef d'ouvre* of Gothic spires, but, on the other hand, we can claim the finest Classic campanile in existence, that of St. Mary-le-Bow, in Cheapside,—the result of British native genius, and, to me, one of the grandest creations of human artistic skill, of which we may justly feel proud, towering as it does, with its unrivalled proportions and matchless elegance, in the midst of a busy bustling thoroughfare. Graceful yet powerful, fairy-like yet dignified, there it stands, a work of art from the studio of Sir Christopher Wren, and acknowledged as a masterpiece of skill by the whole civilised world.

Some notes of the discussion which followed will be found in another column.

VITTORE PISANO.

Mr. R. S. Poole gave his second lecture on "Medals" at the Royal Academy on the 25th, taking for his subject the works of Vittore Pisano, the first and by far the greatest of the medallists of the Renaissance. Pisano's contemporaries put him in the highest place both as a painter and as a medallist, and his medals amply confirm their judgment.

The artist was by birth a Veronese. He died at a good age in 1451 or 1455, and thus must have been born in 1380 or a little later. His medals were executed when he was from 54 to 58 years old until the age of 65 or 69. It is surprising that he should have begun a new style of work and revived a lost art in a fresh form at an age when many men retire from activity, or, at least, have lost the power of original production.

Pisano first made his fame as a painter. Unfortunately but little of his work in this direction has been spared by time. An authentic picture is in our National Gallery, the "Meeting of St. Anthony and St. George." It would be thought by comparison that this was a work in earlier style than the medals, but Professor Colvin has well observed that the drawings of Pisano he discovered in the British Museum disallow this judgment. These give on one side the best fresco of the master in the Grand Ducal Palace at Venice, painted in 1422 or a little later, and therefore twenty years before the medals; and on the other, studies of horse and foot soldiers for a battle subject. This is in what has been called his later manner. Professor Colvin remarked to the lecturer that the National Gallery picture is evidently an altar-piece, which would account for its severer style. In simple straightforwardness and richness of colour the picture in the National Gallery gives Pisano the first place, which the unanimous voice of his time granted him. The same qualities which the Museum sketches show are equally evident in the admirable studies of animals kindly lent for the lecture by Sir Frederick Leighton. In all we see truth, power, grandeur, and simplicity.

With these masterly qualities Pisano came to his work as the reviver of the art of medals. Though he signs himself "painter" on these works he appears as a sculptor, giving sculpture due weight in the art of relief. He worked from sketches, of which the Vallardi series in the Louvre presents undoubted specimens. These are most instructive to artists, showing how Pisano tried different positions of the head and made capital studies for the reverses. His medals are marked by extreme care. The letters, neglected by many, are by him treated with a wonderful delicacy and most happy effect.

Pisano's ideal of the portrait was that of the greatest Greek masters. The man was to be portrayed with his whole powers at the best he had achieved, or could achieve. In carrying out the ideal, he deviated from the Greeks in a severe realism of representation. This seeming contradiction can only be explained by his having had an extraordinary diagnosis of character. His idealism is shown by his power of representing types, and by the superior greatness of his work to that of his contemporaries. Three portraits of the great condottiere Sigismund Malatesta of Rimini, by Pisano, Matteo dei Pasti, and an unknown sculptor, who executed a relief in marble in the Templum Malatestianum at Rimini, bring out the excellence of Pisano. His medal shows the determination, the finesse, the cultivation of the soldier of fortune,—Pasti, his cruelty; the sculptor, his ferocity, marked with the melancholy of a foredoomed line. Pisano saw Sigismund at his best, and even in the better possibility which Isotta partly developed. Still he is the typical *condottiere:* so, too, is Novello, the gentle brother of Sigismund, founder at once of the Library and Hospital of Cesena, a delicate and sweet type, swayed by religion, and happy in endurance, is as skilfully portrayed. In Alfonso the Magnanimous, king of the Two Sicilies, Pisano has seized the characteristics of the strong Gothic type of the sovereign whom he calls in his medal Bellator et Pacificus, great in his wars and clement in his conquests, a strong, resolute, well-balanced face, such as Alfonso VI. might well have had. In John Palaeologus the artist has recorded the delicate and noble features of the last Cæsar but one, who strove to avert by diplomacy the catastrophe in which his brother Constantine nobly fell. Two other heads were especially interesting, the Spanish noble, Inigo Davalos, represented in very low relief, balanced by his broad cap and veil, and the saintly maiden, Cecilia Gonzaga, a most interesting portrayal, owing its beauty alone to its innocence and religious quality.

Turning to the reverses Mr. Poole remarked on the care with which the artist chose either a simple representation, such as a study on horseback of the subject on the obverse, or a perfectly intelligible allegory. Of this latter, three were represented by the delightful maiden and unicorn on the medal of Cecilia Gonzaga, the Love presenting a scroll of music to a Lion, Lionello d'Este, whose marriage is thus commemorated, the boar-hunt of Alfonso the Magnanimous, springing on and smiting the beast, or more nobly shown in the Liberalitas Augusta medal, sitting as an eagle above the lesser birds of prey to whom he leaves the quarry.

At the close of the lecture the diagrams were explained more particularly, and the excellence of the compositions of the reverses specially shown.

Mr. Poole expressed his great obligation to Professor Legros and the students of the Slade School who had presented to him the admirable illustrations which he showed.

ARCHITECTURAL ASSOCIATION.

At the ordinary meeting of this Association on the 20th inst., Mr. C. R. Pink, Vice-President, in the chair, the following gentlemen were elected members, viz.,—Messrs. F. C. Gant, A. E. Taylor, R. O. Allsop, W. Wynhall, T. H. Hitchin, F. E. L. Harris, Stephen Box, H. S. Freeman, S. D. Robins, J. A. Morris, H. Phillips, and A. A. Cox.

On the motion of Mr. H. D. Appleton, Hon. Sec., a vote of thanks was given to Mr. Alfred Morrison, for permitting the members to visit his house, No. 16, Carlton House-terrace, on the 14th inst., as mentioned in our last (p. 265).

It was announced that the next visit would take place to-day (Saturday, February 28th), to some houses in Collingham-gardens (Messrs. Ernest George & Peto, architects), and to the new St. Paul's Schools, Kensington (Mr. Alfred Waterhouse, A.R.A., architect).

Mr. Herbert A. K. Gribble then read a paper on "The Roman Renaissance," which we print elsewhere (see p. 317).

In the course of the discussion which followed,

The Chairman observed that Mr. Gribble had presented to the meeting a very useful and instructive paper, which went to show that much might be learned from the Renaissance churches of Rome, and that the work of Sir Christopher Wren must not be allowed to drop out of the young architect's studies. Wren certainly developed congregational planning, and so long as churches were built for congregational purposes his work could not be altogether ignored. Neither should the work of Inigo Jones and Hawksmoor be entirely disregarded by church-planners. Architectural students might also, perhaps, usefully study the earlier English Renaissance of the time of Elizabeth and James, for in much of the best work of that period it would be seen how, with Italian ornament, a very picturesque and suitable style of domestic architecture was produced.

Mr. Thomas Blashill, in moving a vote of thanks to Mr. Gribble, urged students of architecture to take advantage of the facilities now offered by tourist agencies, and visit Rome at the first opportunity. As to Mr. Gribble's remark about the decorative value of marbles, he quite concurred in it, but at the same time he should be sorry to see the late Mr. Burges's proposals for encasing the interior of St. Paul's with marble revived and carried out. He looked forward with very considerable interest to the effect which Mr. Gribble's Church of the Oratory at Brompton would have when the internal decorations were completed, for to his (Mr. Blashill's) mind that church was the only building in England (with the exception of St. Paul's) which gave one any idea of the great Renaissance churches of Italy. He thought that the members of the Association would do well to study the Italian Renaissance style a little more. So far as it went, the establishment of one or two travelling studentships was all very well, but he thought that the Association might, with the facilities before referred to, organise an excursion or a series of excursions to Rome and other cities of pre-eminent interest to the student of architecture.

Mr. J. A. Gotch, in supporting the vote of thanks, remarked, with reference to internal colour-decoration, that such specimens as he had seen of it, at any rate in Gothic structures, did not encourage one to be enthusiastic about it. Very possibly in Classic structures, where there were larger masses, and the lines were not so numerous, the use of colour might be made more satisfactory, but in Gothic the multiplicity of the constructional features militated against the successful use of colour. In the Chapel of the Hospital of St. Cross, near Winchester, for example, the constructional lines had been quite obliterated or concealed by the colour which had been applied. Mr. Gribble had awarded the palm for Gothic steeples to Antwerp, but he (Mr. Gotch) could not agree in that award, although the Antwerp steeples were very wonderful; but he quite concurred in the eulogium which had been passed upon the steeple of St. Mary-le-Bow, Cheapside. While agreeing with what had been said as to the value of the study of the Renaissance churches, he thought it would be a long time before we had another era of Renaissance church-building in England.

Mr. G. Richards Julian believed that we were approaching a period in which Classic architecture would meet with increased favour. In his opinion, the reason why Classic architecture had hitherto so egregiously failed in this country was that our architects had allowed rules and formulæ to become their masters instead of making them their servants. It should be remembered that the Italian Renaissance of the fifteenth century was coeval with the commencement of the modern world. We belonged to the modern world, and he believed that in the long run Renaissance architecture would not fail to assert itself and come to the front. But he was very sorry to see that in the present revival so very much attention was being paid to the Dutch and Early German Renaissance,—commonly called "Queen Anne," though it was not "Queen Anne." There was much that was picturesque and quaint in that kind of work, but the fault that he found with it was that the architects who designed it, instead of aiming at beauty of proportion and refinement of detail, aimed exclusively at mere "quaintness," which in the works copied from was often the result of grotesque proportions and coarse detail,—defects due to the ignorance of the old builders. It seemed to him to be a great pity that men of undoubted genius should allow themselves to imitate false proportions and ungraceful detail.

Mr. G. H. Blagrove, having said a few words as to what he regarded as the sometimes unhappy effect of entasis on pilasters, the motion for a vote of thanks to the reader of the paper was carried, with much applause, and Mr. Gribble briefly replied.

COMPETITIONS.

Proposed New Training College, Norwich.—The Committee of Management, with the assistance of their assessor, Mr. Ewan Christian, subject to certain modifications in respect of arrangement, and to conditions as to verification of estimate, have provisionally accepted the design of Messrs. Oliver & Leeson, of Newcastle-on-Tyne, architects. They desire to thank the other architects from whom they have received plans for the trouble they have taken in preparing their designs.

Longton Endowed Schools.—This competition has at last been decided. Forty-six designs were received, including one from an architect in Buffalo, U.S. The governors examined them in the first instance, and made a selection of six, but afterwards called in Mr. Royle, architect to the Manchester School Board, and Mr. Lewis, of Newcastle, to give independent reports on the whole forty-six designs. Each of the reports placed the design marked "*Bona fide*" first, on the ground of excellence of plan and architectural treatment, but expressed doubts whether it could be executed for the stipulated sum of 2,000*l.* The governors, therefore, called upon the author (who was found to be Mr. Charles Bell, F.R.I.B.A., of London) to prove his estimate at his own cost before adopting his plans. This Mr. Bell has done by obtaining estimates, the lowest being 1,784*l.*, to which was added the cost of desks, bell, and sundry fittings, amounting to 268*l.*, making a total of 2,047*l.*, including cost of quantities, without which the amount would be 1,997*l.* The governors, therefore, have appointed Mr. Bell their architect, and the works will be proceeded with at once in strict accordance with the competition plans.

Newbury District Hospital.—Designs by ninety-four architects were received in this competition, and were carefully inspected by Mr. Alfred Waterhouse, A.R.A., who selected eight designs for further consideration, viz., those by the following:—Messrs. Beazley & Burrows, Mr. C. W. Mountford, Messrs. Newman & Newman, Mr. J. B. Phillips, Mr. H. G. Turner, Messrs. Webb & Tubbs, and Mr. W. H. Woodruffe. Mr. Waterhouse eventually gave his decision in favour of Mr. Henry G. Turner, of 1, Great James-street, London, W.C., and the Trustees, acting on this advice, have determined to adopt Mr. Turner's plans and employ him as their architect.

Abingdon Cottage Hospital.—The design of Mr. Charles Bell, F.R.I.B.A., of London, has been selected for the building out of six submitted in limited competition. The hospital will be erected at the cost of Mr. J. C. Clarke, M.P.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

The eighteenth annual meeting of this excellent Institution was held on Tuesday evening last at its new offices, 21, New Bridge-street, Blackfriars, the President elect, Mr. James Greenwood (of the firm of J. & J. Greenwood), in the chair, supported by the outgoing President, Mr. Joseph Randall (Kirk & Randall), and Messrs. Thos. F. Rider, Thos. Stirling, T. Bishop, E. Brooks, J. Robson, Burchell, C. K. Turpin, G. Bugg, and other friends and supporters. Letters expressing the regret of their writers at their inability to be present were read from Mr. Edward Conder and Mr. Arthur Cates, F.R.I.B.A., the latter congratulating the committee on being able to present so gratifying a report.

The report and balance-sheet, read by the secretary, Mr. H. J. Wheatley, showed that the Institution has been increasingly successful during the past year in enlisting sympathy and support, though, as was pointed out by one or two of the speakers at the meeting, there are large numbers of builders' clerks who do not subscribe to the Institution. The report, after expressing the indebtedness of the Institution to the outgoing President, Mr. Joseph Randall, stated that the amount of the annual subscriptions to the charity during the year was 271*l.* 15s.; of donations, 397*l.* 7s.; and of dividends on Stock, 70*l.* 2s., making altogether the sum of 739*l.* 4s., being an increase of 88*l.* 7s. 5d. over the total of the preceding year. In addition to the foregoing amounts, the committee have received the sum of 90*l.* 4s. 1d., being the legacy (less duty) bequeathed by the late Mr. William Ward, whose nephew, Mr. Thomas Peto Ward, was directly instrumental in founding the Institution. The disbursements during the year amounted to 266*l.* 18s., expended in pensions and temporary relief; while the general expenses for rent, printing, advertising, secretary's salary, collector's commission, &c., amounted to 97*l.* 2s. 7d. In the course of the year, two additional pensioners (viz., Mrs. M. E. Robinson and Mrs. A. P. Friend) have been elected on the Relief Fund, bringing up the total number of pensioners to fourteen, the males receiving 25*l.*, and the females 20*l.*, per annum. An election had also taken place in connexion with the Orphan Fund, the result being that Edith A. M. Friend was elected and was duly nominated a scholar in the Orphan Working School (per presentation of the Institution), in succession to Ethel M. Jeffreys, whose school-term expired at Christmas. At the annual festival, held at the Holborn Restaurant, the sum of 418*l.* 2s. 6d. was obtained in response to the earnest appeal of the President of the year (Mr. Joseph Randall). The report concluded with the announcement that Mr. James Greenwood had consented to accept the office of President for the coming year.

The Chairman, in moving the adoption of the report, expressed his determination to do all he could to further the prosperity of the Institution, especially in the way of setting forth its claims upon builders' clerks as a body.

Mr. Thomas F. Rider, in seconding the motion, suggested that the Institution, prosperous as it was, might be still more useful and prosperous if means were taken to make its objects widely known. Possibly, too, the time had arrived when the committee might take into consideration the advisability of increasing the pensions from 25*l.* to 30*l.* for the men, and from 20*l.* to 25*l.* for the women.

The report and balance-sheet were unanimously adopted, and on the motion of Mr. Thomas Stirling, second by Mr. Edwin Brooks, a vote of thanks was given to Mr. Randall for his services as President during the past year.

On the motion of Mr. Burchell, seconded by Mr. G. Bugg, Mr. James Greenwood was elected President; Mr. Edwin Brooks was re-elected treasurer; Messrs. G. Bugg, B. C. Fox, J. C. Holding, E. W. Holland, E. C. Roe, and T. W. Winney, were re-elected to serve on the committee; and Messrs. S. J. Thacker, T. Stirling, and T. Bishop were re-elected auditors; and a vote of thanks (proposed by Mr. E. C. Roe, and seconded by C. K. Turpin) was given to Mr. Greenwood for presiding.

ELECTION OF A DISTRICT SURVEYOR.

At the meeting of the Metropolitan Board of Works on the 20th inst., the first business was the election of a District Surveyor for the District of South-east Deptford, in the room of the late Mr. John Whichcord. There were thirty-one candidates, viz., Messrs. A. Ashbridge, T. Batterbury, H. H. Bridgman, C. W. Brooks, H. Cheston, S. F. Clarkson, J. S. Edmeston, G. Edwards, R. F. C. Francis, W. Grellier, J. Hamilton, W. J. Hardcastle, A. Harland, E. Hazelhurst, G. Inskipp, G. Jackson, L. Karslake, G. A. Lean, W. H. Lees, H. Lovegrove, H. McLachlan, E. Marsland, T. E. Mundy, R. C. Murray, W. H. Nash, O. Renton, W. Smallpeice, W. L. Spiers, W. H. Stevens, H. W. Stock, and E. Street. These were first reduced in the usual way by voting on all the candidates, and retaining the six who received the highest number of votes, who were Messrs. A. Ashbridge (27 votes), S. F. Clarkson (22), W. J. Hardcastle (25), W. H. Lees (29), E. Marsland (25), E. Street (26). The subsequent voting was as follows:—

	Second Vote.	Third Vote.	Fourth Vote.	Fifth Vote.	Final Vote.
Ashbridge	17	11	8	—	—
Clarkson	16	10	—	—	—
Hardcastle	15	—	—	—	—
Lees	29	30	30	28	25
Marsland	26	27	24	21	16
Street	24	21	18	11	—

Mr. Lees was therefore declared elected.

THE "MAGASINS DU PRINTEMPS."

Sir,—Permit me to compliment you and your artist, Mr. Cooper, on the very excellent example of wood engraving,—the "Magasins du Printemps,"—in the *Builder* of the 21st instant. For an architectural illustration nothing could be better. J. Murgatroyd, F.R.I.B.A.

Manchester, Feb. 23, 1885.

⁂ We have had other evidence that the views we expressed in our leading article of January 3rd as to the merits of wood-engraving as a means of illustration are shared by some at least of the architectural profession; and Mr. Cooper certainly merits a compliment for thorough and conscientious execution of this class of work.

THE ROYAL ARMS.

Sir,—The circumstance following may be worthy of your notice in connexion with Mr. E. Cockburn's letters printed in the *Builder* of the 24th of January last [p. 152] and the 21st of February current [p. 284]. A few days before the royal review which was held on the 25th of August, 1881, in the Queen's Park, Edinburgh, her Majesty ordered that the standard to be hoisted at the saluting-point should be the Royal Standard of Scotland, and not that of England, bearing in its first and fourth quarters "the ruddy lion rampt in gold." Our sovereign's interposition proved the more grateful, inasmuch as as my countrymen's susceptibilities had suffered through the raising of the English standard on a similar occasion, in that same place, about twenty-five years ago. M. of M.

Sir,—In thanking Mr. Cockburn for the trouble he has taken in answering my inquiry about the Royal Arms in Scotland, permit me to say that Lower is the authority I referred to, but owing to his "Curiosities" not being indexed it was only by accident that I came across it a few days since. He mentions that on the accession of James VI. to the English throne a great controversy arose between the Heralds of the two nations as to which should use the first quarter, and that the matter was referred to Sir William Segar, who produced a learned treatise of *imaginary* heraldry by tracing the lions of England and Scotland back to 1,000 years before the Christian era! which must have been highly gratifying to the dwellers North and South of the Tweed respectively, and to his Majesty in particular. J. B.

"Black, White, and Red Lead."—This was the title of the third of the present series of free lectures to artisans, which was delivered by Professor Church at Carpenters' Hall, on Wednesday evening. We defer our report.

"NON-ACCEPTANCE OF LOWEST TENDER."

SIR,—With reference to the letters of "Fairplay," p. 183, Mr. Wm. White, F.S.A., p. 217, and Mr. W. Hoffmann Wood, F.G.S., p. 252, of your journal, can either of the two latter gentlemen quote a case where damages have been obtained by a contractor who was invited, and whose tender, although the lowest, was not accepted? I was invited by a firm of architects at Bedford to tender for the erection of a steam-mill at that place; and, although my tender was the lowest (and verbally accepted), I received two days later a letter from the architects that their client had accepted a higher tender, and upon asking for an explanation of such extraordinary proceedings, I was told that it was on the ground that the accepted party was a neighbour.

I may add that at the foot of the invitation were these words,—"The lowest tender will not necessarily be accepted." CONTRACTOR.

SIR,—The statement I made in my letter of the 9th inst. [*Builder*, p. 252] is perfectly correct.

I shall be glad to give "Bona Fides" my authority if he will write to me.

W. HOFFMAN WOOD, F.G.S.

14, *Park-square, Leeds*. Feb. 24.

FIREPROOF FLOORS.

SIR,—We note that in your otherwise favourable notice of our new Illustrated Catalogue of Constructional Ironwork in the *Builder* of last week [p. 288], you take exception to the fact that the iron beams shown in concrete floors have equal flanges at top and bottom, instead of having upper flanges of reduced area.

Without entering on the question of the relative strains on the flanges of joists thus used, we may point out that rolled joists of unequal flanges are not made,* as such sections would be inapplicable to the majority of purposes for which iron beams are employed.

Of course, in cast-iron girders this difficulty would not occur, but equally cast-iron girders are not suitable for fireproof floors. With wrought-iron beams it is a different matter, as the rolls from which they are produced would have to be specially cut at very considerable expense to make this alteration. ROWNSON, DREW, & CO.

DAMP DWELLINGS.

SIR,—In reference to Mr. Bird's letter (p. 252), if water finds its way through the roof, it may run down the rafter and be deposited on the top of the damp wall. See that the roof is sound, also the gutters.

If it should be unmistakable that the damp drives through the wall, give the outer surface a good coat of the following solution every three years:—one-third of a pound of paraffin wax to one gallon of benzoline. The wax must be dissolved in a portion of the benzoline over a slow fire, and must be applied on a dry warm day. Keep the solution from the air, as the benzoline evaporates rapidly. Pour out a small quantity for use, and add more benzoline as it evaporates. The paper should be washed off and not repapered for twelve months, as all moisture at present in the wall will have to dry out inwards. X.

The Student's Column.

DESCRIPTIVE GEOMETRY.—IV.

IN the early French Renaissance, roofs are seldom made to mitre at 45 degrees, but the narrow side is generally steeper than the long side; this is perhaps the secret of their elegance.

We may, therefore, have to find the intersection in plan and elevation of two roofs of different slopes, and even in cases where the walls of the building, and therefore the eaves of the roof, are not at right angles, as in fig. 20.

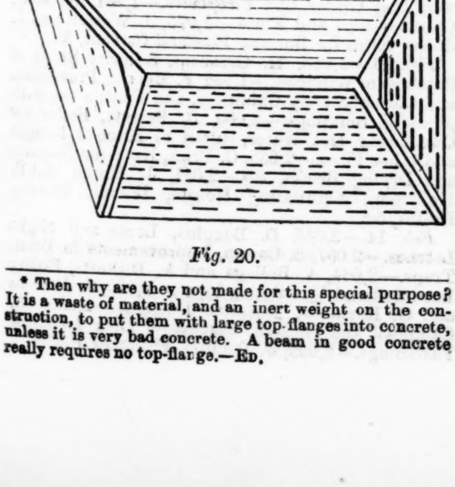

Fig. 20.

The two following problems will show the method to be used:—

Find the intersection of the planes P and Q, of which the vertical traces belong to different elevations.

In this case we have two ground-lines L T and $L^1 T^1$, the horizontal traces of the planes will be P^h and Q^h, but the vertical traces will be for the one P^v, for the other Q^{v1}, which signifies that the trace of Q belongs to the elevation on line $L^1 T^1$. To find the intersection of the planes P and Q we use an *auxiliary* plane, H, of which we can readily draw the intersections A and B with the planes given, for being horizontal lines, their plans A^h and B^h are parallel to the horizontal traces P^h and Q^h. The point y, where A and B meet belongs to the intersection of which x is another point; therefore the line $x\,y$ is the intersection required, which we can draw both on the plan and on one of the elevations. (See fig. 21.)

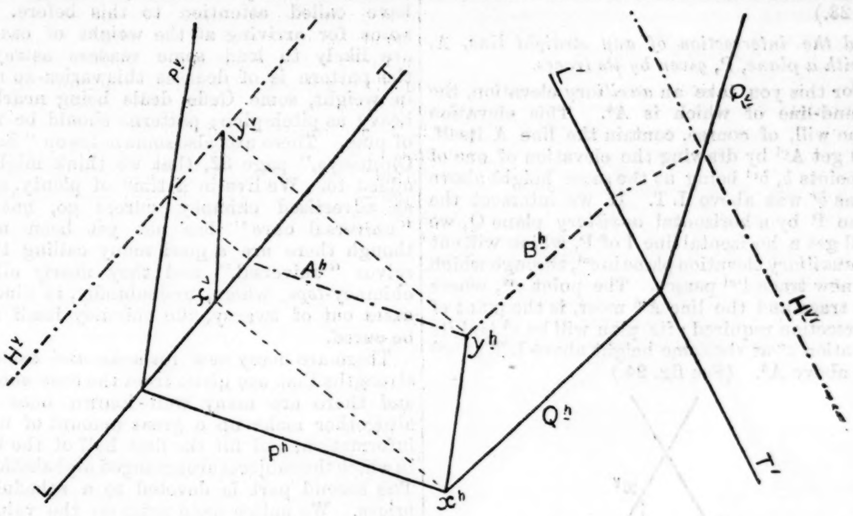

Fig. 21.

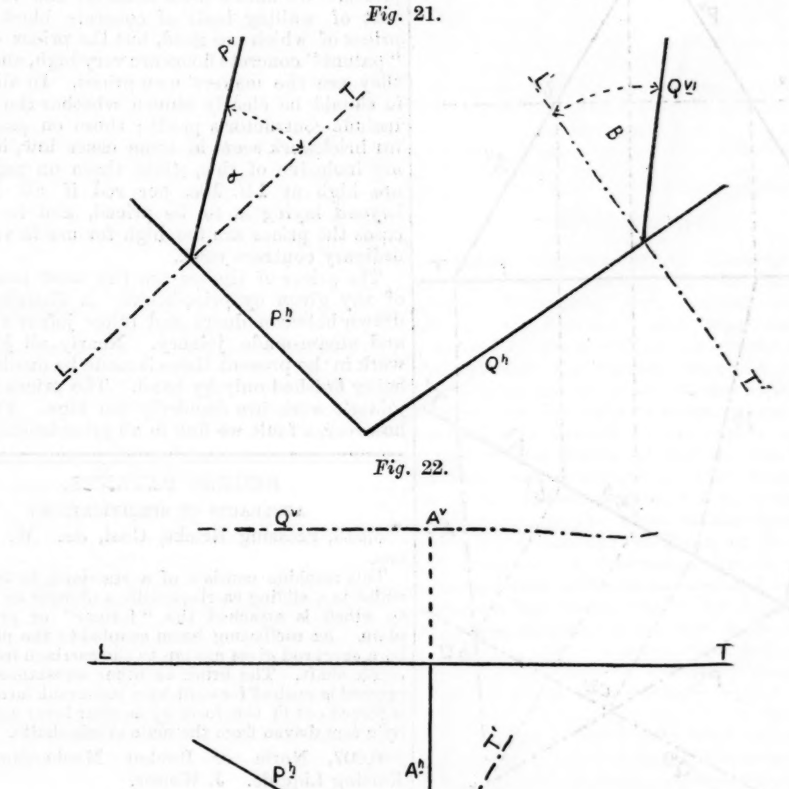

Fig. 22.

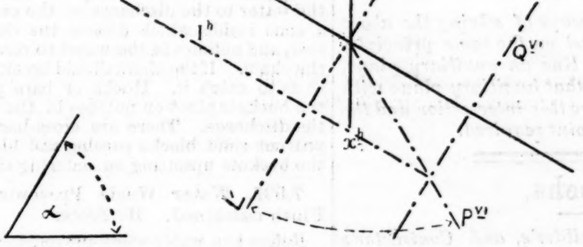

Fig. 23.

The second problem is that of our Renaissance roofs.

Find the intersection of the planes P and Q given by their horizontal traces (eaves in case of roofs), and their respective slopes a and β.

We solve that problem by cutting the planes by two elevation planes on the lines L T and $L^1 T^1$ at right angles with the traces P^h and Q^h; and, thanks to the angles of slope given a and β, we can readily draw the vertical traces P^v and Q^{v1} of the planes, so that the problem is brought back to the preceding one. (See fig. 22.)

Find in a roof plan the point where a straight line perpendicular to the elevation enters a roof the eaves and slope of which are given.

This is again solved by means of both an *auxiliary* elevation and an *auxiliary* plane. Let P^h be the eaves of the roof, the angle a its slope, L T the ground-line of the elevation, A the straight line the elevation of which is only a point A^v. If we intersect our roof by an *auxiliary* elevation on the ground-line $L^1 T^1$ at right angle with the eaves we know its trace

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* Then why are they not made for this special purpose? It is a waste of material, and an inert weight on the construction, to put them with large top-flanges into concrete, unless it is very bad concrete. A beam in good concrete really requires no top-flange.—ED.

P^{v1}, thanks to the angle a of its slope. If we suppose an *auxiliary* horizontal plane, Q, passing by the line A, its trace on our elevation will be Q^v, and on our *auxiliary* elevation it will be Q^{v1} at the same height over $L^1 T^1$ as Q^v is over L T. On the *auxiliary* elevation we see where the horizontal plane Q cuts our roof, and we can easily draw the plan I^h of its intersection, for it is parallel to the eaves, the point x^h is therefore the plan of the point where the line A enters the surface of the roof. (See fig. 23.)

Find the intersection of any straight line, A, *with a plane,* P, *given by its traces.*

For this you take an *auxiliary* elevation, the ground-line of which is A^h. This elevation plane will, of course, contain the line A itself. You get A^{r1} by drawing the elevation of one of its points b, b^{v1} being at the same height above A^h as b^v was above L T. If we intersect the plane P by a horizontal *auxiliary* plane Q, we shall get a horizontal line I of P, which will cut the *auxiliary* elevation plane in c^{v1}, through which the new trace P^{v1} passes. The point x^{v1}, where this trace and the line A^{v1} meet, is the point of intersection required; its plan will be x^h and its elevation x^v at the same height above L T as x^{v1} was above A^h. (See fig. 24.)

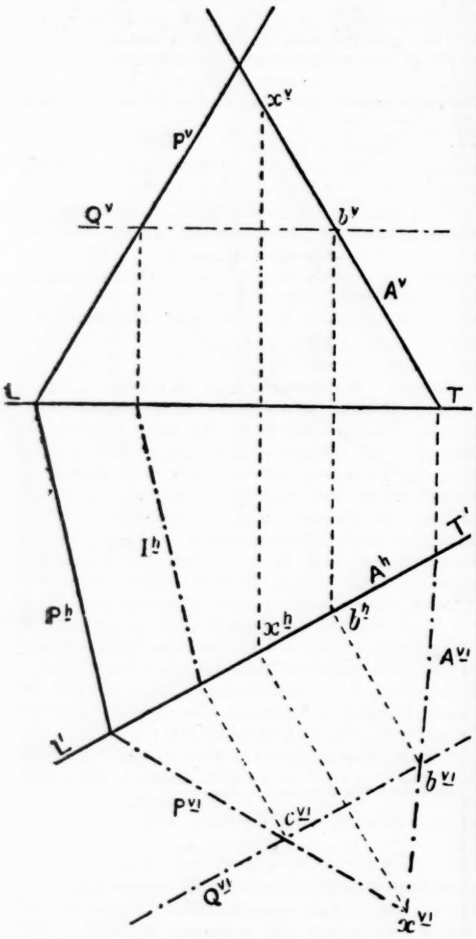

Fig. 24.

There are different ways of solving the above problem, but they all rest on the same principle, viz., take through the line an auxiliary plane, find the intersection of that auxiliary plane with the plane given. Where this intersection and the given line meet is the point required.

Books.

Spon's Architect's, Builder's, and Contractor's Pocket-book of Prices and Memoranda for 1885. Edited by W. Young, Architect. Twelfth edition. London and New York: E. F. and N. Spon. 1885.

This very useful little book, which is really a "pocket" book, and compresses a great deal of information into a most conveniently small volume, is one of the most useful of the kind to architects, not so much on account of its price lists as for the amount and variety of useful memoranda on materials and methods and formulæ which it contains. Some of the items are old-fashioned; the "orders" still appear in their pure Vitruvian form, and the words "Doric order" in the index still direct the reader to a form of architecture which no one now ever thinks of when speaking of "Doric." A tyro getting hold of the book might be entirely misled by this. Of course no architect would be likely to refer to a pocket-book of this kind for "the orders"; but if this is retained as part of the contents of the book there should, at least, be some reference to the fact that the orders as given are Roman only, and that there is such a thing as Greek Doric, or rather Doric proper, with which the Vitruvian so-called Doric has really no affinity whatever. We have called attention to this before. The notes for arriving at the weight of castings are likely to lead some readers astray, if the pattern is of deal, as this varies so much in weight, some Gefle deals being nearly as heavy as pitch-pine; patterns should be made of pine. There are also some notes on "Smoky Chimneys," page 32, that we think might be added to. We live in a time of plenty, so far as advertised chimney-curers go, but the "universal cure" has not yet been made, though there are a good many calling themselves "universal," and they nearly all are chimney-*tops*, where, undoubtedly, in nineteen cases out of twenty, the chimney itself must be cured.

There are many new formulæ and tables of strengths that are given from the best sources, and there are many well-known ones that altogether make up a great amount of useful information, and fill the first half of the book, in which the subjects are arranged alphabetically. The second part is devoted to a schedule of prices. We notice some notes on the value or cost of walling built of concrete blocks, the prices of which are good, but the prices of the "patent" concrete floors are very high, although they are the makers' own prices. In all cases it should be clearly shown whether the prices include contractor's profit; those on page 243 for brickwork seem in some cases low, if they are inclusive of this, while those on page 246 are high at 14*l*. 10s. per rod if all labour beyond laying is to be priced, and in many cases the prices are too high for use in valuing ordinary contract work.

The prices of timber are the most complete of any given by price-books. A distinction is drawn between doors and other joiner's work, and steam-made joinery. Nearly all joiner's work in the present times is made by machinery, being finished only by hand. The prices of the joiner's work are decidedly too high. This is, however, a fault we find in all price-books.

RECENT PATENTS.

ABSTRACTS OF SPECIFICATIONS.

3,513, Pressing Bricks, Coal, &c. W. Johnson.

This machine consists of a standard, in front of which is a sliding carriage with a plunger or block, to which is attached the "former" or pressing plate. An oscillating beam coupled to the plunger by a short rod gives motion to the carriage from the crank shaft. The brick or other substance to be pressed is pushed forward by a bell-crank lever, and is forced out of the form by another lever actuated by a cam driven from the main crank-shafts.

6,007, Noria or Bucket Mechanism for Raising Liquids. J. Welter.

This consists of a chain of buckets which discharge into a wheel with spiral blades, which carry the water to the discharge at the centre. There is a cone inside which directs the discharge on one side, and notches in the wheel to receive the bolts of the chain. If the chain should break forks are fitted so as to catch it. Hooks or bars projecting from the buckets pivot on notches in the wheel to effect the discharge. There are cross-bars in buckets to prevent solid blocks passing and blades to prevent the buckets upsetting on entering the water.

7,597. Water Waste Preventer and After-Flush combined. H. Trott.

Refers to a water-waste preventing apparatus and an after-flush combined for water-closets; it may be fitted to any cistern. To the bottom of the cistern below the discharge-valve is fitted a casing. In this casing there is a small conical cistern provided with an air-pipe, and with a valve at the bottom which is closed on pulling the chain. The conical cistern is raised by the pull rod or chain till it lifts the discharge-valve. The discharge-valve delivers into the conical cistern and overflows into the down-pipe. When the rod is released the main discharge-valve closes, and the valve at the bottom of the conical vessel opens and delivers the after-flush.

1,763. Improvements in Household Fire-escapes. W. H. Gaze.

This is a closed up fire-escape, which opens out in sections from any floor-level, but is protected from being opened from the ground level by a locking arrangement. The steps are of iron tube, and the sides are of angle iron. Segmental stays are fitted at intervals above the level of each window-sill. These stiffen and support the structure when opened out for use.

928. Tip-Wagon. C. Batten.

The wagon tips on a pivot fixed to the underframe near the rear end of the vehicle. Two standards, one on either side of the wagon, each carrying a small roller or pulley-wheel, is fixed to the framing near the tail-board. When the van is tipped the bars move along the rollers, and the tail-board is moved outward and upward. On bringing back the wagon the tail-board is returned to the closed position.

2,149. Slide Rule. L. G. Ram.

The rule consists of two pieces of wood held together by metal straps. A slide works between them, and the two rules carry ivory sliders on them. The scales are for engineering calculations, and are marked with strains and stresses, loads, &c.

3,220, Flush Pan Closet. John Friend.

This water-closet is formed in a cylindrical plunger chamber in connexion with the closet basin. The plunger is made of tinned copper in the form of a taper pipe 3 in. in diameter, and 2 in. at the bottom, and is securely trapped by a cap on the top which carries off waste or overflow. A disc of rubber or flexible material is secured to the end of the plunger to serve as a valve which fits into a conoidal valve-seat. A crank is attached to the plunger for lifting the valve in the cistern above, which is fitted with the usual service-box.

3,123, Use of Iron Plates in place of Brick Jambs in fixing Grates and Chimneypieces. W. T. Allen.

Consists of wrought or cast iron plates fixed perpendicularly on each side of any ordinary grate, and to extend to the back of the flue with another plate of the same material, having its face moulded, fixed horizontally across the top of, and to rest on, the side plates, and fastened to them. The horizontal plate extends from the back of the flue, and projects so as to form the chimney-piece. The plate also contains an aperture for the flue.

5,928, Builder's Stage. J. E. Doughty and P. E. Kranich.

This is a builder's stage attachable to and serving to strengthen ladders. A wooden platform, with channel iron sides, is hinged to an angle iron frame. This frame is hooked at the top to fit on the spokes of a ladder, and is further secured to the ladder by a cross-bar. The platform is fixed at any desired elevation or inclination by thumbscrews, passing through guides attached to the platform, and through the pivoted stays. A rack sliding-frame, with a padded end, bears on the wall, and serves to stiffen the ladder, and is secured by a catch, which which can be withdrawn by a sliding rod under the platform.

APPLICATIONS FOR LETTERS PATENT.

Feb. 6.—1,651, J. Elam, Improved Fire Grate, &c.—1,678, A. Marriott, Heating Buildings by Means of Hot-water or Steam.—1,683, A. M. Clark, Improvements in Lathing.

Feb. 7.—1,725, J. Morrison, jun., and A. Emley, Excavating or Digging Machines.—1,734, E. Bushell, an Improved Cowl.

Feb. 9.—1,747, T. Perrott, Moistening and Improving the Surfaces of Grindstones, &c.—1,749, H. Stockman, Improvements in Water Meters.—1,763, J. Rowe, Improvements in Riveted Joints.—1,777, G. H. Chubb and G. Exton, Door Locks, Latches, and Furniture.—1,778, J. Thomlinson, Manufacture of Plaster or Cement.

Feb. 10.—1,799, A. Keighley and A. Watson, Holdfasts for Carpenters, Joiners, Cabinetmakers, &c.—1,815, W. Beckett, Circular Saws.—1,848, F. Podany, New File.—1,862, J. Wilesmith, jun., Securing Door, Cupboard, and other Knobs to their Spindles.—1,872, A. Putney, Improvements in Wood Flooring.

Feb. 11.—1,888, G. Ellis, Portable Pavement or Flooring.—1,893, G. Hammond, Mitre Frame Cramp.

Feb. 12.—1,926, J. Cooper, Joint for Socket-pipes.—1,928, T. Gelder and J. Wilson, Draw Plate for Fire Ranges.—1,940, J. Easby, Automatic Stench-trap Apparatus.—1,957, H. Moorwood and J. Watson, Dog Grates and Fireplaces.—1,961, W. Holt, Chimney-tops and Flues.—1,975, J. Watson and J. Spoor, Kilns for Burning Portland Cement, &c.

Feb. 13.—1,983, H. Gresham, Security Stops or Catches for Windows.—1,986, F. Merritt, Prevention and Cure of Smoky Chimneys, and Ventilating Soil-pipes or Buildings.—2,000, R. Perrott, Boiler for Circulating Hot Water, suited to Kitchen Ranges and other Fires.—2,035, C. Price, Kilns for Burning and Drying Bricks, &c.—2,041, J. Horne and S. Hollyman, Ventilating Houses, Rooms, Sewers, Drains, &c.

Feb. 14.—2,045, D. Buggins, Locks and Night Latches.—2,057, S. Cowan, Improvements in Drain Traps.—2,064, A. Billings and A. Dicketts, Fixing Lead Soil and Ventilating Pipes.—2,069, J. Jeavons and G. Reynolds, Portable Dustbins.—2,092, A. Campbell and G. Ash, Catches of Door Locks or Fastenings.—2,095, J. Doulton, Fireproof Floors.

Feb. 17.—2,153, L. Brode and T. Rankin, Improved Hydraulic Cement.—2,160, E. Colton, Wall Decorations, &c.—2,161, H. Faija, Apparatus for Treating Slurry or Slip in the Manufacture of Portland Cement and Bricks.—2,175, L. Groth, a New Fire Grate.—2,183, A. Boult, Appliances for Cleaning Water-closets, Sinks, &c.

Feb. 18.—2,223, J. Gibson, Securing Slates to Roofs and other Parts of Buildings.—2,233, H. Cleave, Manufacture of Lath Backing for Plaster Work.—2,247, J. Horne and S. Hollyman, Chimney-pot for Preventing Down-draughts.

Feb. 19.—2,259, T. Cudlipp, Preventing Stoves from Cracking when in use.—2,260, W. Crosskey and J. Robertson, Adjustable Locking Spanner.—2,293, G. Angus, Combined Bedstead, Toilet Stand, Wardrobe, and Sideboard or Chiffonier.—2,304, J. Turner, Manufacture of Material for Covering and Decorating Walls, &c.—2,306, H. Hunt, Improvements in Kitcheners.

PROVISIONAL SPECIFICATIONS ACCEPTED.

15,825, J. Walker, Turn Buttons and Plates for Fastening Doors and Windows.—15,984, J. Jenkins, Fire Grates and Furnaces.—15,997, F. McAdam and H. Jones, Balancing and Securing Sliding Window Sashes. — 340, R. Rossborough, Manufacture of Faced or Coated Bricks.—382, J. Snowdon and S. Swallow, Panelling and Pressing Bricks.—386, J. Bryce, Reproducing Ornamental Designs.—400, A. Andrew, Mouthpieces and Dies used in the Manufacture of Clay Bricks, &c.—996, J. Stanley, Manufacture of Pigments or Colours.—16,504, H. Smith, Preventing the Rattling of Window Sashes.—16,624, T. McLlean, Apparatus for Cleaning Sinks, &c.—16,952, J. Watts, Smoke Tests for Pipes for Passages.—102, C. Holt, Apparatus for "Drawing" Kitchen Fires and Preserving the Bars.—108, F. Thompson, Pocket Saws.—333, W. Hellis, Combination Wardrobe, Cupboard, or Bookcase.—520, F. Botting, Smoke Test for Drains, &c.—526, W. Hitchin, Window Rack Pulleys.—623, E. Bailey, Securing Door and Other Knobs and Handles.—796, B. Banks and Others, Pivot and Weather Bar Arrangement for Swing and Reversible Windows.—841, C. Shields, Joining Lead Pipes.— 880, J. Gillespie, Appliances for Repairing and Binding Chimneys.—950, H. Walker and G. Clark, Fire Grates.—1,033, E. Hill, Hanging and Supporting Window Sashes.—1,090, D. Ward and G. Hayward, Socket Chisels and Gouges.—1,148, A. Mackie, Door Check.—1,166, H. Walker and G. Clark, Kitchen Ranges.—1,203, E. Heathcote, Kitchen Ranges.—1,269, E. Beal, Window Fastenings.—13,830, F. Angles, Apparatus for Flushing Water-closets.—15,695, J. Kernaul, Water-meters.—16,722, T. Dykes, Construction of Girders.—16,873, J. Smith, Composition for Imitating Carved and Moulded Woodwork.—212, H. Salomo, Carrier for Wood Turning Lathes.—388, T. Softley, Self-closing Doors and Gates.—695, W. Hacking, Portable Soldering Apparatus.—1,176, H. Cunningham, Apparatus for Cooling Cement, &c.—1,230, G. Turnbull, Improvements in Kitchen Ranges.—16,775, H. Smith, Fire-proof Passages for gaining Access to Buildings on Fire, and Fire-extinguishing Appliances for use therewith.—16,862, G. Pepper, Lavatory or Wash-hand Basins.—414, J. Julian and T. Phillips, Water-waste Preventing Apparatus.—1,165, G. Ganod, Automatic Shutters, Gates, or Doors, for Closing the Openings of Hoists and Lifts.—1,172, W. Harling, Surveying Levels.—1,214, P. Gray, Apparatus for Facilitating the Ascent of Factory and other Chimneys by Workmen for Repairs, &c.—1,291, H. Walker and R. Carey, Hydraulic Lifts.—1,354, J. Dinning, Detergent Composition for Removing Old Paint, Varnish, Rust, &c., from Wood, Plaster, or other Surfaces.—1,382, H. De Berenger, Plaster Ceilings and Walls.—1,488, J. Bennison, Improvements in Domestic and other Fireplaces.—1,539, J. Walker and H. Worsey, Attaching Door and other Knobs to Spindles.

COMPLETE SPECIFICATIONS ACCEPTED.

Open to opposition for two months.

3,745, A. Achurch, Machines for Trenching Land for Draining Purposes.—6,184, A. M. Clark, Combination Locks.—6,467, W. Morris, Improvements in Bridges.—6,806, J. Hall, Improvements in Fire-grates.—6,857, G. Beamish, Construction of Breakwaters, Retaining-walls, &c.—7,660, W. Wyatt, Sash-line Holder.—8,943, S. Bivoort, Improved Pavement or Flooring.—3,624, C. Tarling, Folding Steps.—3,741, J. Parker, Improved Door Locks.—4,934, R. Adams, Appliances for Sliding Window-sashes, and Converting same into Revolving Sashes.—6,146, G. Newton, Water Cisterns.—6,355, W. Stephenson, Ventilating and Warming Rooms.—6,362, A. Henderson, Metal Roofing Tiles.—6,582, J. Stadler, Improved Roofing Tile.—7,144, G. Wright, Stove Grates or Fireplaces.—11,983, C. Henderson, Warming and Ventilating Buildings.—13,634, C. de Bourbon, Veneers, and Method of applying same.—14,715, W. Nicholls, Window Frames and Sashes. — 16,790, H. Williams, Window Sash-fastener.—331, M. Ismay, Device for retaining Doors in their Closed Position.—3,265, W. Young, Improvements in Closets or Privies.—4,764, J. Johnson and W. Urton, Holdfasts for Pipes and Spouts.—8,193, F. Harrison, Sunk-slide, Flush, and Knob Bolts for Doors, &c.—12,291, J. Walsh, Portable Hand Bolt for Doors or Windows.—535, R. Henry, Window Sash-line Fastener.—621, E. V. Bailey and Others, Rack Pulleys.—669, P. Walker, Manufacture of Tiles, &c., from Portland or other Cement.—5,281, J. Friend, Water Waste-preventer.—6,919, J. Kent, Water-closet Disinfecting Apparatus.—6,960, A. Overfield, Door Locks or Latches, and Knobs or Handles for same.—7,028, J. Clements, Improved Chimney Top.—7,061, J. Cartwright, Stench or Drain Traps.—7,089, W. Moyes, Sen., and Others, Improvements in Urinals and Water-closets.—7,125, F. Brown, Stove Grates or Fireplaces.—7,395 and 7,397, J. Jones, Concrete or Artificial Stone for Paving, &c.—7,419, C. Mackintosh and W. Richards, Improved Hinge.—13,878, W. Lake, Improvements in Bakers' Ovens.—16,000, H. Allison, Manufacture of Artificial Stone, and treating the Surface of same.

RECENT SALES OF PROPERTY.

ESTATE EXCHANGE REPORT.

February 12.	
By Baxter, Payne, & Lepper.	
Bromley, Tylney-road—Two cottages, 79 years, ground-rent 5*l*.	£250
Down, Kent—Two cottages, 25 years, ground-rent 2*l*.	160
February 16.	
By McLachlan & Sons.	
Clapham—136, High-street, 9 years, no ground-rent	760
Kennington—26 and 28, Oxford-terrace, 40 years, ground-rent 13*l*.	720
Brixton — 37, Cowley-road, 16 years, ground-rent 4*l*. 12s. 6d.	230
By G. Brinsley.	
Walworth—91, St. Paul's-road, 41 years, ground-rent 5*l*.	260
February 17.	
By Debenham, Tewson, Farmer, & Bridgwater.	
Whitechapel—135 and 136, High-street, freehold site, containing 2,970 square feet	4,010
Camberwell—46 and 48, Benhill-road, freehold	990
No. 24, Elmington-road, 82 years, ground-rent 4*l*. 10s.	350
Peckham—16, Queen's-road, 25 years, ground-rent 5*l*. 10s. 6d.	255
Battersea — Leasehold ground-rents of 25*l*. per annum, 65 years	430
By Rogers, Chapman, & Thomas.	
Belgravia—11, Lower Belgrave-street, 17 years, ground-rent 5*l*.	525
South Kensington—2 and 3, Moreton-terrace, 88 years, ground-rent 40*l*.	4,210
Regent's Park—23, Cumberland Market, 40 years, ground-rent 4*l*.	390
Battersea—10, 12, and 14, Creek-street, 45 years, ground-rent 16*l*.	415
No. 46 to 62 even, Park-grove, 79 years, ground-rent 36*l*.	1,885
By W. W. Saunders.	
Camden Town—16, Goldington-crescent, 59 years, ground-rent 5*l*.	560
By W. H. Moore.	
Camden-square—30, North-villas, 77 years, ground-rent 11*l*.	800
No. 18, South-villas, and a ground-rent of 3*l*. per annum, 77 years, ground-rent 6*l*.	500
Fitzroy-square — 58 and 60, Charlotte-street, 17 years, ground-rent 75*l*.	370
February 19.	
By Beadel & Co.	
Barking—A freehold residence, and 3a. 2r. 0p.	2,500
Plot of freehold land, 2 acres	1,500
No. 8, 10, and 12, the Broadway, freehold	1,290
No. 2, 3, 4, 10, 11, and 12, Back-lane, freehold	560
By Rice Brothers.	
South Lambeth—129, Hartington-road, 20 years, ground-rent 35*l*.	130
Wandsworth—1, Brooklands-road, 24 years, ground-rent 4*l*. 4s.	135
Battersea—3, 9, 10, and 11, Sussex-street, 43 years, ground-rent 9*l*. 18s.	815
By Hussey, Walcott, & Blackford.	
Stratford—67, Windmill-lane, 65 years, ground-rent 5*l*.	345
Regent-street—27, Foubert's-place, freehold	1,430
Pimlico — 2, Rutland-street, 40 years, ground-rent, 8*l*.	500
February 20.	
By Norton, Trist, Watney, & Co.	
Portman-square—73 and 74, Crawford-street, 20 years, ground-rent 10*l*.	1,340
Overton, Hants—Freehold house and stabling	560
By Murrell & Scobell.	
Hampstead—6, Holly Mount, copyhold	320
Camden Town—An improved rent of 16*l*. a year for 19 years, and 70*l*. a year for 18 years	170
One-fourth share of copyhold ground-rents of 1,270*l*. a year, but increasing to 1,391*l*. per annum, with reversions in from 17 to 48 years	7,470
Margate, Thanet-road—Two plots of freehold land	270

MEETINGS.

Saturday, Feb. 28.

Architectural Association.—Visit to Houses in Collingham-gardens and St. Paul's School, Kensington. Assemble at School at 3 p.m.

Builders' Foremen and Clerks of Works' Institution.—Annual Dinner. Holborn Restaurant. 6.30 p.m.

London Sanitary Protection Association. — Annual Meeting. 4 p.m.

Monday, March 2.

Royal Institute of British Architects.—Special General Meeting of Members, to elect the Royal Gold Medallist, &c. 8 p.m.

Royal Academy.—Mr. G. Aitchison, A.R.A., on "Staircases." I. 8 p.m.

Society of Arts (Cantor Lectures).—Mr. J. M. Thomson on "The Chemistry of Pigments." II. 8 p.m.

Female School of Art.—Distribution of Prizes by the Duchess of Westminster in Prince's Hall, Piccadilly. 3 p.m.

Victoria Institute.—Mr. J. Hassall on the question, "Was Primitive Man a Savage?" 8 p.m.

Society of Engineers.—Mr. Arthur Rigg on "American Engineering Enterprise." 7.30 p.m.

Royal Institute of the Architects of Ireland (Dublin).—Council.

Architectural Section, Philosophical Society of Glasgow.—Mr. David Barclay on "The Cleansing of the River, and a Substitute for Water-closets."

Clerks of Works' Association.—Mr. G. R. Webster on "A Simple Method of Perspective Drawing. 7 p.m.

Tuesday, March 3.

Birmingham Architectural Association.—Mr. W. Doubleday on "Symbolism in Art." 7.30 p.m.

Institution of Civil Engineers.—Mr. W. Stroudley on "Locomotive Engines." 8 p.m.

Society of Biblical Archæology.—M. Edouard Naville on "The Inscription of the Destruction of Mankind, on the Tomb of Rameses III." 8 p.m.

Wednesday, March 4.

Royal Academy.—Mr. Alfred Waterhouse, A.R.A., on "Westminster Abbey." 8 p.m.

Builders' Foremen and Clerks of Works Institution.—Ordinary meeting. 8.30.

Carpenters' Hall, London Wall (Free Lectures to Artisans).— Mr. Thomas Blashill, F.R.I.B.A., on "The Shoring of Buildings." 8 p.m.

British Archæological Association.—(1) Mr. E. J. L. Scott on "Early MSS. relating to Tenby and its Locality." (2) Mr. H. Syer Cuming on "The old Traders' Signs in Paternoster-row." 8 p.m.

British Museum.—Mr. W. St. C. Boscawen on "Assyrian and Babylonian Antiquities." II. 2.30 p.m.

Society of Arts.—Professor H. S. Hele Shaw on "The Evolution of Machines." 8 p.m.

Thursday, March 5.

Institution of Civil Engineers.—(Students' Meeting).—Professor Unwin on "Water-Motors." 8 p.m.

Society of Antiquaries.—Ballot for the Election of Fellows. 8.30 p.m.

Royal Archæological Institute.—(1) Mr. W. T. Watkin on "Roman Inscriptions discovered in Britain in 1884." (2) Mr. J. L. Stahlschmidt on "Church Bells." 4 p.m.

Friday, March 6.

Royal Academy.—Mr. G. Aitchison, A.R.A., on "Staircases." II. 8 p.m.

Architectural Association.—Mr. John Slater, B.A., on "Building Stones." 7.30 p.m.

Royal Institution.—Prof. C. T. Newton, C.B., on "The German Discoveries at Pergamus." 9 p.m.

Lincoln Diocesan Architectural Society.

British Museum.—Prof. J. F. Hodgetts on "Mediæval English Remains." III. The Monk. 2 p.m.

Saturday, March 7.

Edinburgh Architectural Association.—Visit to Corstorphine Church and neighbourhood.

Miscellanea.

Surrey Archæological Society. — The annual general meeting of this Society was held on Wednesday last, the 25th inst., at 8, Danes' Inn, Strand, and was numerously attended by the members. Viscount Midleton, President of the Society, occupied the chair, and moved the adoption of the report of the council and the balance-sheet. Among other matters, the council, in the report, expressed regret at the deaths of H.R.H. the Duke of Albany, late President of the Society, and Mr. R. A. Godwin-Austen, F.R.S., a member of the council; in the place of the former they had elected Viscount Midleton as President of the Society. A discussion ensued, in which Messrs. Granville Leveson-Gower, F.S.A., R. G. Rice, Curling, Ralph Nevill, F.S.A., H. Maudslay, Major Heales, and the Rev. R. M. Blakiston took part. One subject discussed was the desirability of forming a County Museum and Library, which was strongly urged. It was resolved to refer the suggestion to the council, and ultimately the report and balance-sheet were unanimously adopted. The retiring members of the council, and the other officers of the Society, including the auditors, Messrs. J. T. Lacey and W. F. Potter, and the honorary secretary, Mr. Thomas Milbourn, were re-elected, and the proceedings closed with a vote of thanks to the President.

Large Sale of Building Land at Lewisham.—On Monday evening Mr. Richard J. Collier conducted a very successful sale of building land, at the Plough Tavern, Lewisham. The property submitted comprised the second portion of the Priory Estate, at Lewisham, containing sixty-nine lots. There was a very large attendance, and preliminary to the several lots being offered Mr. Collier announced that the Priory Mansion had been subdivided into two houses, and that, in consequence, the ancient residence, which possessed a special historical interest, would be preserved. He added that half the mansion, with eleven plots, had been previously sold. At the sale on Monday all the plots, with the exception of eight, were sold at prices much better than those obtained at the previous sale, the front lots, containing 18 ft. frontage and 100 ft. deep, selling for 150*l*. each, whilst the majority of the back lots realised about 4*l*. per foot frontage. The kitchen garden, and remaining portion of the mansion were bought in. The total proceeds of the sale amounted to about 5,000*l*.

British Archæological Association.—At the meeting of this Association on the 18th inst., Mr. Thomas Morgan, F.S.A., in the chair, it was announced that the unsafe condition of the ruins of Carew Castle, noticed during the recent Congress at Tenby, had been reported to the owner, Mr. E. G. Carew, of Crowcombe Court, and that works of repair had been arranged for. These will be strictly limited to the upholding of the building, to prevent injury by frost or tempest, and nothing will be done to take off the appearance of the building as a ruin. Mr. Loftus Brock, F.S.A., reported the existence of a large portion of old London wall, now visible in the street of the same name, at Moorgate, just to the west of All Hallows Church. It is now revealed by recent excavations for buildings, having been buried by the accumulated earth of centuries. A paper on "The Roman Baths of Bath" was then read by the Chairman. After referring to Mr. Irvine's conjectural restoration, which appears to be well supported by more recent discoveries, the lecturer proceeded to describe in detail the whole of the building now revealed, tracing the portions uncovered from their first discovery. The paper was illustrated by several paintings and drawings prepared by the Misses Morgan. Another portion was then read of the paper prepared by the Rev. G. F. Browne on the remarkable Cross in Leeds Church. The shaft is covered with figure subjects having reference to old Norwegian or Scandinavian myths unique in England.

The Surveyors' and Auctioneers' Clerks' Provident Association.—We have received the first annual report and financial statement of this Association, which has its registered office at the Auction Mart, Tokenhouse-yard, E.C. The President is Mr. Daniel Watney, and the list of Vice-Presidents includes the names of many well-known surveyors and auctioneers. The report gives the result of twelve months' work ending 31st of December, 1884. The appeal for subscriptions to form the reserve fund of the Association has resulted in the receipt of a gross sum of 1,451*l.* 2s., of which 1,365*l.* is from donations and 86*l.* 2s. from annual subscriptions. This sum has been appropriated to the various objects entitled to it under the rules; the greater part to the benevolent and superannuation funds. The members' subscriptions amounted to 52*l.* 7s. 9d. The committee express their sense of obligation to the donors who have so generously provided a fund which gives the Association a present secure position, and must have an important influence on its prospects. About sixty applications for membership have been received. Of these twenty-four were not completed, eighteen having fallen through, and six being declined, or deferred for a time, on medical grounds. The Committee appeal to employers to direct the attention of their clerks to the Association, and to the advantages offered to them by a society so intimately connected with the profession. The Committee deplore the loss of Mr. George Trist, one of the trustees, who was a liberal subscriber to the Association.

Paper made from Sawdust.—A roller pulp machine has been invented by Mr. Pond, of Rutland, Vermont, by which sawdust, shavings, chips, and pieces of wood can be made with great rapidity into a pulp of clean, fine fibre. The machine will also manipulate the stalks of cotton, sugarcane, wild hemp, &c., at the rate of from 2 tons to 3 tons of dry pulp per diem. The resulting pulp is stated to be far superior to any other form of wood pulp, because the fibre is preserved intact and the cellulose is left with it, giving it great strength, softness, and pliability. The tensile strength per square inch of newspaper, which contains from 50 to 75 per cent. of ground wood pulp, is said to be from 8 lb. to 12 lb., and to stand a test of 17 lb. to the square inch, showing that it is much stronger than paper made from one-third rags. The woods most adapted to the process are the soft woods, such as spruce, fir, pine, poplar, and hemlock, the latter making the strongest fibre, being quite equal to jute in strength. Besides the manufacture of paper, the pulp can also be utilised for woodware, such as pails, barrels, and mouldings.—*Iron.*

Iron Buildings for the Soudan.—Messrs. Clark, Bunnett, & Co. (Limited), of Rathbone-place, W., have received instructions from the War Office to erect and ship in fourteen days thirteen corrugated iron buildings for stores for service in the Soudan, covering an area of about 25,000 super. feet.

The Tower of St. Magnus' Church, London Bridge.—Owing to the dilapidated state of the stonework, the rector and churchwardens have found it necessary to undertake the work of restoration of the tower of the Church of St. Magnus the Martyr, Lower Thames-street. Upon completion of the scaffolding, the architect was called upon to survey and report to the vestry upon its state, which was found to be much worse than was at first anticipated, requiring a large portion of its cornices to be reinstated, many of them being split and splintered off at the joints, owing to the regrettable practice of inserting iron cramps into the stone when the tower was built. The cramps will be removed wherever practicable, and reinstatements made throughout in solid Portland stone. The restoration of the tower has been undertaken by the well-known church builders, Messrs. Dove Brothers, of Islington, under the direction of Mr. A. Billing, of Bank-chambers, Tooley-street, S.E.

A Conference on Cholera.—A conference of representatives of the principal countries of Europe will shortly be held, at the invitation of the Italian Government, in Rome, for the purpose of discussing the steps which it is advisable to take in the event of an outbreak of cholera occurring. We understand, although no definite arrangement has yet been arrived at, that England will be represented by Sir W. G. Hunter, K.C.M.G., and Dr. Thorne Thorne, of the Medical Department of the Local Government Board. Should the rumour regarding the appointment of English representatives be confirmed, we congratulate the Government upon the choice it has made, feeling sure that the opinion of the medical profession and sanitarians of this country will be fully and clearly enunciated, although we can perhaps hardly hope for many, if any, new precautions to be adopted in the event of a cholera epidemic.—*Lancet.*

Colonial and Indian Exhibition, London, 1886.—Messrs. Henry S. King & Co. have received the appointment of sole official agents for India. Mr. C. Purdon Clarke, C.I.E., Keeper of the India Section of the South Kensington Museum, has, by special permission of the Lords of the Committee of Council on Education, departed for Bombay charged with a special mission by H.R.H. the Prince of Wales, Executive President of the Exhibition. Mr. Clarke's special duty will be to make arrangements for the illustration on a large scale of the handicrafts of India by the selection of native artisans, who will be brought to England, and work at their several trades in the exhibition.—*Overland Mail.*

Serious Fire at a Builder's.—One of the most alarming fires that had ever been witnessed in Newbury and district occurred on Saturday morning, the 21st inst., at four o'clock. The whole of the Albert Steam Joinery Works and Moulding Mills, the property of Mr. Samuel Elliott, were completely destroyed. The works are situated to the north of the town, and occupied several acres. The true origin of the fire is unknown, but it is supposed the bearings got heated. The destruction to the machinery alone is estimated at 8,000*l.* The total loss is estimated between 25,000*l.* and 30,000*l.*

The Blackburn and East Lancashire Infirmary.—The annual meeting of the Governors of this Institution was held a few days ago. The Board of Management, in their report, refer with satisfaction to the recent enlargement of the Infirmary. The cost of the new wing and lodges was 4,897*l.* 15s. 9d. The entire cost has been defrayed. The wing and lodges were erected by Messrs. Thomas Higson & Sons, from the plans and under the superintendence of Mr. A. W. R. Simpson, of Blackburn, architect to the Board.

The Chemistry of Pigments.—The first of a course of two Cantor Lectures on this subject was given in the hall of the Society of Arts on Monday evening last, by Mr. J. M. Thomson, F.C.S. The lecture dealt with the nature and division of colours, the deleterious actions on white pigments, and methods for counteracting the same. The second lecture, to be delivered on Monday evening next, March 2, will be devoted to an examination into the chemistry of coloured pigments and of certain organic and special pigments.

The Female School of Art.—The annual distribution of prizes to the students of the Female School of Art will take place in the Prince's Hall, Piccadilly, on Monday afternoon next. The Duchess of Westminster will officiate.

Lower Clapton.—Upton House "Truant" School, the first industrial, or rather, "truant" school, built by the School Board for London, has just been erected in the Urswick-road, Lower Clapton. It has a frontage of 170 ft., and with the kitchen garden, drill-yard, &c., occupies nearly an acre of ground. It is built of stocks, with red facings, arches, &c. The main entrance being of Portland stone, with oak doors. Although not an ordinary "Board" school, it nevertheless partakes largely of the same style. The architect is Mr. E. R. Robson. The builder is Mr. C. Cox, St. George's Works, Hackney, and the clerk of works, Mr. H. R. Butson. The numerous details connected with this class of building have been carefully studied. The governor's house is connected with, though separate from, the main building. The apartments of the labour-masters, &c., are at the back of the centre of the main building, and command a complete view of both dormitories and grounds. There are four large dormitories, sick and day wards, school and class rooms, large dining-hall, bath-rooms, lavatory, laundry, and workshops, besides the various stores, &c. The kitchen and offices connected therewith are complete in arrangement, and the reception and disinfecting wards are quite distinct. The drainage has been carried out in two separate systems, one for soil and the other for surface-water, &c., the various inlets to the latter being carried outside, and delivered over stoneware gullies (Doulton's) underneath stones with hinged gratings. Messrs. Longden & Co. have executed the heating, cooking, and laundry apparatus (all of which are worked by steam), as also the fire hydrants, &c. The lavatory is fitted with three rows of Butson's Patent Lavatory Apparatus; gas-fittings are by Messrs. Stevens & Sons; the electric bells and speaking-tubes connecting the entire building, by Messrs. Land & Co.; the disinfecting apparatus by Messrs. Benham & Sons; and the tar-paving by Messrs. Hobman & Co.

Craven House, Northumberland-avenue. Messrs. Archibald Smith & Stevens, hydraulic engineers, of Queen's-road, Battersea, have been instructed to erect one of Stevens & Major's patent hydraulic suspended passenger-lifts at Craven House, Northumberland-avenue. This will be worked by water supplied through the mains of the London Hydraulic Power Company.

TENDERS.

For the superstructure of a block of offices at the corner of London Wall and Little Winchester-street, E.C. Mr. F. T. Pilkington, architect. Quantities by Mr. W. Barnett:—

Saunders	£24,380	0	0
Higgs & Hill	23,793	0	0
Shurmur	23,100	0	0
Lawrance	22,785	0	0
Boyce	22,500	0	0
McGregar	22,500	0	0
Reading	22,489	0	0
Stimpson & Co.	22,230	0	0
Shaw	22,064	0	0
Perry & Co.	21,805	0	0
J. O. Richardson	21,679	0	0
Brown & Son	21,590	0	0
Hobbs	21,550	0	0
Mowlem & Co.	21,500	0	0
Gentry	21,434	0	0
Morter	21,137	0	0
Brass & Son	20,873	0	0

For the erection and completion of two small shops in the Broadway, Crouch End. Mr. W. Smith, architect:—

Cowley	£392	10	0
Hirst	385	0	0
Mattock Bros.	345	0	0
Durnford & Langham	333	0	0
J. O. Richardson (accepted)	298	0	0

Accepted for alterations and additions to a warehouse in Crown-court, Milton-street, E.C. Mr. W. Patterson, architect:—

J. O. Richardson	£479	0	0

[No competition.]

For building five shops in the Old Kent-road, S.E., for Mr. T. Backhouse. Mr. W. C. Reed, architect, Adelaide-place, London Bridge:—

Legg	£1,590	0	0
Smith	1,497	0	0
Cross	1,397	0	0
Marriage	1,250	0	0

For alterations to shop-fronts and houses in East-street, S.E., for Mr. T. Backhouse. Mr. W. C. Reed, architect:—

Greenow	£385	0	0
Battey	250	0	0
Wood	199	0	0
Kemp	168	0	0

For repairs to premises, High-street, Bromley, Kent. Mr. Robert Ridge, architect and surveyor, 7, Katherine-street, Croydon:—

Tucker	£268	0	0
Barrell	227	0	0
Muffett	210	10	0
Grubb (accepted)	178	0	0

COMPETITIONS, CONTRACTS, & PUBLIC APPOINTMENTS.

Epitome of Advertisements in this Number.

COMPETITIONS.

Nature of Work.	By whom required.	Premium.	Designs to be delivered.	Page.
Erection of a Pier	Met. Asylums Board	Not stated	March 16th	ii.

CONTRACTS.

Nature of Work, or Materials.	By whom required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.	Page.
Making-up Roads	Wandsworth B. of Wks.	*Official*	March 3rd	xxi.
Supply of Various Materials	Fulham Board of Wks.	do.	March 4th	ii.
Carrying away of Slop and Rubbish	Vestry of the Parish of Lambeth	Hugh McIntosh	March 5th	xxi.
Works and Materials	do.	do.	do.	xxi.
Completing Two Houses	....	W. A. Murphy	do.	ii.
Additional Station Buildings, Cudworth	Midland Railway Co.	A. A. Langley	March 6th	ii.
Removal of Dust, Ashes, House Refusal, &c.	Hackney Board of Wks	*Official*	March 7th	xiv.
Enlargement of Post-Office, Westn-Supr-Mare	Com. of H.M. Works	do.	March 9th	ii.
New Streets' Works	Vestry of St. Giles, Camberwell	do.	do.	xiv.
Footway Paving	Whitechapel B. of Wks.	do.	do.	xiv.
Granite, &c., Kerbing, Flints, Slag, &c.	Hendon Local Board	do.	do.	xiv.
Works and Materials	Hornsey Local Board	T. de Courcy Meade	do.	xiv.
Works and Materials	Willesden Local Board	O. Claude Robson	March 10th	ii.
Paving and Curbing Works	do.	do.	do.	ii.
Tar Paving	do.	do.	do.	ii.
Timber Supply	Great Western Ry. Co.	*Official*	do.	ii.
Altering and Enlarging Town-hall	West Ham Local Brd.	Lewis Angell	do.	ii.
Materials and Works	Vestry of Rotherhithe	*Official*	do.	ii.
Annual Contracts	Lewisham Brd. of Wks.	do.	do.	xxi.
Works and Materials (Sewers and Drains)	Strand Board of Works	do.	March 11th	xiv.
Wood Paving	Fulham Board of Wks.	do.	March 12th	ii.
Well-Sinking, &c., for Water Supply	Teignmouth Local Brd.	George Crow	March 14th	xxi.
Erection of Pumping Engine-House	Ebbw Vale Steel, &c., Co.	*Official*	do.	xxi.
Tar Pavement	Mortlke Dis. Hghwy B.	J. Medworth	do.	xiv.
Jobbing Work (Builder's)	do.	do.	do.	xiv.
Broken Guernsey Granite, &c.	do.	do.	do.	xiv.
Widening of Queen's Bridge	Belfast Corporation	J. C. Bretland	do.	ii.
Erection of Pier, nr. Wndswrth Brdgs, Fulhm	Met. Asylums Board	*Official*	March 16th	xiv.
Hospital for Infectious Diseases	Wrexham R. S. A.	A. C. Baugh	March 18th	xiv.
New Post-Office, Folkestone	Com. of H.M. Works	*Official*	do.	ii.
Drainage Works	Fulham Union	do.	March 19th	xiv.
Construction of Main Sewers, &c.	Farnham Local Board	J. Lemon	March 23rd	xxi.
Sewage Outfall Works	West Ham Local Board	Lewis Angell	March 24th	ii.
Erection of Pauper Lunatic Asylum	West Riding Pauper Lunatic Asyl. Menston	J. Vickers	March 31st	xiv.
New Church, Longridge	....	E. Christian	Not stated	xxi.
Small Model Lodging House	....	B. S. Giraud	do.	xxi.
New Baptist Chapel, Wirkworth	The Committee	J. W. Chapman	do.	ii.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.	Page.
Clerk of the Works	Croydon Union	3*l*. 3s. per week	March 2nd	xviii.

For repairs to cottages in Surrey-buildings. Mr. W. C. Reed, architect:—

Battey	£147	0	0
Kemp	138	0	0
Oldis Bros	129	0	0

Accepted for the erection of stabling and depôt at Chiswick for the West Metropolitan Tramways Company, Limited:—

Wilkes & Co., 17, Devonshire-square, Bishopsgate.

[At schedule of prices.]

For Congregational church and schools at Chesham, Bucks (including allowance for old chapel). Messrs. W. G. Habershon & Fawckner, architects, 38, Bloomsbury-square, W.C.:—

Patman & Fotheringham, London	£3,125	0	0
W. Groom, Dulwich	2,977	0	0
Burman & Sons, London	2,797	0	0
T. & S. Orchard, Banbury	2,707	0	0
R. & E. Evans, Peckham	2,578	0	0
G. H. Gibson, High Wycombe	2,485	0	0
P. Peters, Horsham	2,323	0	0
C. Monk, Boxmore	2,320	0	0
G. Darlington, Chesham	2,310	0	0
J. W. Snell, Maidenhead	2,305	0	0
H. Haynes, Harrow	2,250	0	0
D. C. Jones & Co., Gloucester	2,217	0	0
Carless & Co., Richmond	2,212	0	0
Taylor & Grist, Aylesbury	2,166	0	0
Fincher & Smith, Tring	1,994	0	0
J. Allen & Sons, Kilburn, N.W.	1,954	0	0
Clayson, Northampton	1,899	0	0
J. Honour & Son, Tring (accepted)	1,839	0	0

For alterations and additions to draper's premises, High-street, Hounslow, for Mr. Sacret. Mr. J. E. Palmer, architect, Hounslow. No quantities:—

Addis	£136	0	0
Pain & Roberts (accepted)	77	15	0
Batchelor	77	10	0

For lodge, St. Agnes' Park, Bristol, for the Rev. J. M. Wilson, M.A. Mr. C. F. Hansom, F.R.I.B.A., architect. Quantities supplied:—

Bale & Westlake	£488	0	0
Pugsley	485	0	0
Howell & Son	462	0	0
J. Perrott	458	0	0
Bastow	453	0	0
Cowlin & Son	450	0	0
Williams & Prosser	450	0	0
Neals	448	0	0
Gorvett	447	0	0
J. Davis	444	0	0
E. & J. Hatherley	440	0	0
T. R. Lewis	435	0	0
Eastabrook & Sons	431	0	0
James Wilkins	421	0	0
C. A. Hayes	415	0	0
James	409	0	0
T. Thomas	400	0	0
Wilkins & Sons (accepted)	385	0	0

For the enlargement of Essex-street Schools, Globe-road, E., for the London School Board. Mr. S. J. Bailey, architect:—

Jackson & Todd	£8,750	0	0
H. Hart	8,676	0	0
Lathey Bros.	8,646	0	0
G. S. Pritchard	8,581	0	0
Perry & Co.	8,558	0	0
M. A. Palmer & Co.	8,555	0	0
C. F. Kearley	8,530	0	0
Wall Bros.	8,400	0	0
C. Wall	8,367	0	0
Atherton & Latta	8,350	0	0
W. Oldrey	8,337	0	0
W. Johnson	8,300	0	0
J. R. Hunt	8,270	0	0
Stimpson & Co.	8,230	0	0
F. & F. J. Wood	8,217	0	0
W. Tongue	8,200	0	0
E. C. Howell & Son	8,166	0	0
Kirk & Randall	8,161	0	0
W. Shurmur	8,145	0	0
S. J. Jerrard	8,089	0	0
J. Grover & Son	8,070	0	0
C. Cox	7,989	0	0
H. L. Holloway	7,887	0	0

For alterations, &c., to the White Hart, Woodford Bridge. Mr. J. F. Wesley, architect:—

Hearle & Son	£2,160	0	0
W. Gregar	2,137	0	0
J. T. Roby	2,032	0	0
F. Ranger	1,998	0	0
J. & H. Cox	1,980	0	0
Palmer	1,895	0	0
Holland	1,885	0	0
W. Shurmur	1,885	0	0
J. A. Taylor	1,851	0	0
C. Barnes	1,829	0	0

For the erection of five houses and shops on the site of the Old Penitentiary, Pentonville-road, for Mr. Alfred Attneave. Messrs. Carritt & Monier Williams, architects, Great St Helen's, E.C.:—

B. Wire	£6,171	0	0!
Shurmur	5,588	0	0
Grover & Sons	5,495	0	0
A. G. Allard	5,250	0	0
J. Johnson	4,987	0	0
J. Higgs	4,979	0	0
Killingback	4,200	0	0
Hunt	4,140	0	0
W. L. Keillaway	3,630	0	0!

For residence at Chobham, Surrey, for Mr. W. H. Corrie. Mr. Edwin T. Hall, 57, Moorgate-street, London, architect:—

Newling	£2,944	0	0
Lynde	2,800	0	0
Martin	2,575	0	0
Gale	2,555	0	0
Watson	2,500	0	0
Batchelor (accepted)	2,220	0	0

Accepted for supplying about 180 tons of iron pipes and special castings for the Claines Local Board, Worcester. Mr. A. Hill Parker, engineer and surveyor, 5, Foregate-street, Worcester:—

C. E. Firmstone & Bros., Lays Foundry, near Stourbridge:—*

	Per ton.		
6-inch pipes	£4	0	0
4-inch pipes	4	2	6
3-inch pipes	4	6	3
Special castings (faced)	8	10	0
Special castings (plain)	7	10	0

* Lowest of seventeen tenders.

For building house, "The Chestnuts" and stabling at Ashford, Middlesex, for Mr. J. Coppen. Quantities supplied:—

	House.	Stabling.
Gibson, Southall	£2,947	£500
Staines & Son, Great Eastern-street	2,858	520
Goodman, Hartham-road	2,830	500
Richardson, New Hampton	2,719	528
Lucas & Son, Kensington-square	2,689	496
Johnson, Wandsworth	2,635	465
Kearley, Uxbridge (accepted)	2,624	460

For the erection of Longton Endowed Schools. Mr. Charles Bell, architect, London. Quantities by Mr. Henry Lovegrove:—

Bromage, Fenton	£2,180	0	0
Barlow, Stoke	2,060	0	0
Collis, Longton	2,009	0	0
Inskip, Longton	1,935	0	0
Gallimore, Newcastle	1,878	0	0
Yoxall & Heath, Trent	1,785	0	0
Cope, Turnstall (accepted)	1,784	0	0

For the erection of Board Schools at Herne Bay, Kent, for the Herne School Board. Mr. Thomas Blashill, architect, London. Quantities by Mr. Henry Lovegrove, 26, Budge-row, Cannon-street, E.C.:—

	Plan A.	Plan B.
Schofield	£5,168	£4,598
Martin, Wells & Co.	5,000	4,450
Allen & Sons	4,780	4,320
Ingleton	4,851	4,272
Ansell	4,600	4,150
Rodda	4,650	4,138
Amos & Foad	4,457	4,047
Cloake & Weston	4,555	4,010
Shrubsole	4,517	3,978
Stiff	4,286	3,880
Smith & Sons	4,335	3,880
Cornelius	4,336	3,863
Wise	4,286	3,793
Greenwood	4,023	3,570
Adams, Herne Bay (accepted)	3,700	3,313

For new front at 213, Oxford-street, for Mr. A. Gianella. Mr. Banister Fletcher, architect:—

Perry & Co.	£1,789	0	0
B. E. Nightingale (accepted)	1,723	0	0

For first portion of villa residences in Belle-Vue-road, Hendon. Mr. Banister Fletcher, architect:—

J. Ellacott (accepted)	£1,200	0	0

For the erection of five houses on the Beaver Estate, Ashford, Kent, for Mr. C. F. Herbert. Mr. Henry J. Jeffery, architect and surveyor, Ashford. Quantities supplied by the architect:—

Bingham, Headcorn	£1,377	0	0
Wood, Ashford	1,360	0	0
Goldfinch, Whitstable	1,345	0	0
Warrington, Tenterden	1,257	13	11
Unwin, Folkestone	1,227	0	0
Brooks, Folkestone	1,200	0	0
Padgham, Great Chart	1,170	0	0
Jeal, Sandgate	1,125	0	0
Castle, Folkestone	1,086	0	0
Giles F. W. Ashford (accepted)	1,020	0	0

For erecting house, shop, warehouse, and factory, No. 21, Bishopsgate, for Mr. Henry Mead. Messrs. Wadmore & Baker, architects. Quantities supplied:—

E. Conder	£8,735	0	0
Dove Bros.	8,375	0	0
Ashby Bros	8,255	0	0
W. Shurmur	8,253	0	0
C. Forrest	8,245	0	0
E. Lawrence & Sons	8,200	0	0
Colls & Sons	8,145	0	0
J. H. Johnson	7,977	0	0
Wm. Brass & Son	7,970	0	0
W. & F. Croaker	7,897	0	0
Ashby & Horner	7,860	0	0
J. Chessum	7,786	0	0
Stimpson & Co.	7,748	0	0
E. B. Nightingale	7,743	0	0
J. & J. Greenwood	7,447	0	0
Jackson & Todd	7,441	0	0
Matlock Bros	7,393	0	0
W. Scrivener & Co. (accepted)	7,280	0	0

For excavator's, bricklayer's, mason's, carpenter's, joiner's, slater's, plasterer's, and smith's work, in the erection of a shop and dwelling-house in Fisherton-street, Salisbury, for Mr. F. C. Carter. Mr. Fred. Bath, architect, Salisbury:—

George Dolman, Salisbury	£720	0	0
Edward Witt, Salisbury	660	0	0
Gilbert Harris, Salisbury	645	0	0
W. J. & C. S. Young, Salisbury*	620	0	0

* Accepted.

[*Plumbing, Painting, Glazing, &c.*]

Josiah Saunders, Salisbury (accepted)	£55	12	6

For fence walling at "Westwood," Salisbury, for Mr. George Read. Mr. Fred. Bath, architect, Salisbury:—

Edward Witt, Salisbury (accepted)	£114	0	0

Accepted for rebuilding two shops and houses at Esther-place, Holloway-road. Messrs. Roberts & Barnard, surveyors, Chancery-lane:—

J. Beale	£1,450	0	0

[No competition.]

Accepted for enlarging class-rooms, &c., at Board Schools, Reading. Messrs. Morris & Stallwood, architects:—

J. H. Margetts	£179	0	0

[Twenty-four tenders submitted; highest, £260; lowest (withdrawn), £147. 15s.]

For pulling down and re-building the Queen's Head public-house, Charlotte-street, Commercial-road, E., for Messrs. Truman, Hanbury, Buxton & Co. Mr. J. T. Newman, architect, 2, Fen-court, Fenchurch-street. Quantities by Messrs. Curtis & Sons:—

Robert Marr	£2,049	0	0
W. Shurmur	2,043	0	0
J. Morter	2,031	0	0
Hearle & Son (accepted)	1,895	0	0

For alterations at the Lord Raglan Tavern, Shernhall-street, Walthamstow, Essex, for Mr. Sharp. Mr. H. F. Simmonds, architect, Cambridge Heath:—

Wood	£485	0	0
Hughes	460	0	0
Mower	457	0	0
Jennings	435	0	0
Ling & Needham	360	0	0
Lipscomb	352	0	0
Barton	336	0	0
Probert (accepted)	300	0	0

For erecting a new office in East St. Helen's street, Abingdon, for Messrs. Sedgefield & Pryce, solicitors. Mr. John George T. West, architect, Abingdon:—

Thomas Barrett,* Abingdon (accepted)	£146	0	0

* The lowest of two tenders received.

For alterations and repairs at a house in Bridge-street, Abingdon, for Miss E. Mundy, of the Manor House, Culham. Mr. John George T. West, architect, Abingdon:—

James Walter, Oxford	£320	0	0
J. Dover, Oxford	290	0	0
E. Williams, Abingdon	289	0	0
C. Hunt, Abingdon	279	0	0
George Thatcher, Abingdon	260	0	0
D. Stroud, Abingdon (accepted)	256	0	0
Thomas Barrett, Abingdon	220	0	0

For alterations and repairs to the Butchers' Arms Inn, Uffington, for Messrs. T. and J. W. Townsend, brewers and maltsters, of Abingdon. Mr. John George T. West, architect, Abingdon:—

John Willis, Faringdon	£4'5	0	0
Shepherd, Faringdon	400	0	0
Alfred Parker, Faringdon	376	0	0
C. Aldworth, Hanney	371	11	6
W. & J. Wheeler, Faringdon	295	0	0
J. Wheeler, Wantage	289	1	6
E. Williams, Abingdon	279	0	0
Thomas Barrett, Abingdon (accepted)	260	0	0

Accepted for new shop-front and fittings at 182, Kentish Town-road, for Messrs. Hull & King:—

R. A. Lamprell, Brixton	£265	12	0

Accepted for new shop-fittings, No. 2, East-street, Taunton, for Messrs. Hull & King:—

R. A. Lamprell, Brixton	£188	0	0

For laying 550 feet of pipe-sewer and manholes and ventilators in Myddelton-road, Bowes Park, Wood Green, N., for the Directors of the National Liberal Land Company. Mr. George Pooley, surveyor:—

J. C. Trueman	£145	0	0
S. Chafen	120	0	0
W. Carter	114	12	0
T. Adams	98	10	0
W. Nicholls (accepted)	93	0	0

For new shed, together with store-room, subway, and appurtenances, at Oatsroyd Mills, Midgley, near Halifax. Mr. T. L. Patchett, architect, Halifax. Quantities by architect:—

Mason's Work (labour only).
Joseph Gaukrodger, Warley, near Halifax.
Ironfounder's Work.
Wood Brothers, Sowerby Bridge.
Plumber's and Glazier's Work.
William Alderson, Luddenden.
Plasterer's and Slater's Work.
J. & T. Alderson, Luddenden.
Carpenter's and Joiner's Work.
(Day-work.)

[Total of work let, £1,512.]

Accepted for the erection of four houses, West Side Estate, Clapham Common. Mr. Frederick Lea, architect:—

J. B. Gerrans	£1,400	0	0

Accepted for the conversion of house, 118, St. John's-hill, S.W., into shop. Mr. Frederick Lea, architect:—

J. B. Gerrans	£355	0	0

For rebuilding the Queen's Head public-house, Charlotte-street, Whitechapel, E., for Messrs. Truman, Hanbury, & Co. Mr. J. T. Newman, architect:—

	If Concrete Floors.			If Wood Floors.		
R. Marr	£2,'49	0	0	£1,989	0	0
W. Shurmur	2,043	0	0	1,980	0	0
J. Morter	2,031	0	0	1,988	0	0
Hearle & Son*	1,985	0	0	1,861	0	0

* Accepted.

SPECIAL NOTICE.—Lists of Tenders frequently reach us too late for insertion. They should be delivered at our Office, 46, Catherine-street, W.C., *not later than Four p.m.* on THURSDAYS.

TO CORRESPONDENTS.

O. P.—H. R. B.—C. F. M.—A. S.—G. C. H.—"Sanatarium" (correspondent should send name, whether for publication or not).—W. W.—E. P. L. B. (plates received).—J. P., Madrid.—C. F. (cannot advise on mere descriptions).—F. M. M., Roxburgh, Mass.—R. G. P. (next week).—T. B. & Co.—K-W. & P.—W. A. W.

All statements of facts lists of tenders, &c., must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

Note.—The responsibility of signed articles, and papers read a public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news-items) which have been duplicated for other journals, are NOT DESIRED.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; all communications relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor.

PUBLISHER'S NOTICES.

CHARGES FOR ADVERTISEMENTS.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE, AND GENERAL ADVERTISEMENTS,

Six lines (about fifty words) or under	4s. 6d.
Each additional line (about ten words)	0s. 6d.

Terms for Series of Trade Advertisements, also for Special Advertisements on front page, Competitions, Contracts, Sales by Auction, &c. may be obtained on application to the Publisher.

SITUATIONS WANTED.

FOUR Lines (about THIRTY words) or under	2s. 6d.
Each additional line (about ten words)	0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

⁂ Stamps *must not* be sent, but all small sums should be remitted by Cash in Registered Letter or by Money Order, payable at the Post-office, Covent-garden, W.C. to

DOUGLAS FOURDRINIER, Publisher,
Addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the Office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

SPECIAL.—ALTERATIONS in STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same, must reach the Office before TEN o'clock on WEDNESDAY mornings.

PERSONS Advertising in "The Builder," may have *Replies addressed to the Office*, 46, Catherine-street, Covent-garden, W.C. *free of charge.* Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage.

TERMS OF SUBSCRIPTION.

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